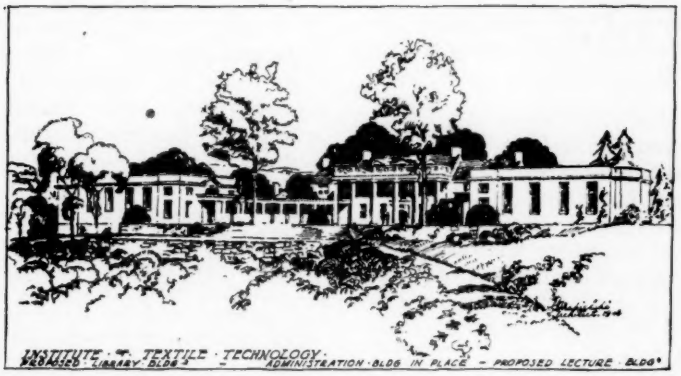
Textile Technology Digest



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ABSTRACTS

I. ORGANIC FIBERS

MODERN TEXTILE BLENDING. Booklet of Newnan Cotton Mills, Newnan, Ga., 1945.

Reviewed in *Rayon Textile Monthly 26*, 207 (April 1945).

I, 1. Vegetable

COTTON HARVESTER. Anon. *Cotton* (Manchester) *51*, No. 2454, 6 (April 28, 1945). News note concerning a new cotton harvester, with burr extractor, which in Oklahoma trial runs appears to be perfectly adapted to the close-fruited cotton grown in Oklahoma. Its capacity is 5-10 bales per day.

DEFOLIATING COTTON. Anon. *Cotton & Cotton Oil Press 46*, No. 9, 5-6 (May 5, 1945). Since cotton must be stripped of its leaves for mechanical harvesting an economical method of chemical defoliation has been developed. The powder can be applied with any type of dusting equipment. It has been found that chemical defoliation also assists in preventing insect damage and prevents rotting of early bolls in a wet season or when weed growth is rank.

JUTE BLANKETS. Anon. *Jute & Canvas Rev. 16*, No. 200, 9 (May 1945). In the search for new uses of jute it has been found that wet strength can be improved by a mild acid treatment. Another method is to apply resin to the jute yarn while under tension. Research on improvements in spinning jute is recorded, including a comparison of spinning behavior and yarn quality in spinning heavy rove with a high draft and light rove with a low draft. A comparison of front and back roving spindles is also underway.

COTTON SEED. Anon. *Mfrs. Record 114*, No. 5, 41-2, 72 (May 1945). Cotton seed, although a by-product, ranks above some of the important material crops in value. It yields fiber (linters), crude cellulose (hulls), edible oil and a protein meal which is used as stock feed and as a source of nitrogen in fertilizer. Linters represent about 10%, and hulls about 5%, of the total value of cotton seed. In addition to older uses cotton seed hulls are now used to make furfural, a compound which serves in the synthesis of rubber and has many other chemical uses.

FLAX FOR PAPER. Anon. *Mfrs. Record 114*, No. 5, 43, 64 (May 1945). Search for a source of fiber to make America independent of imported cigaret paper led the Ecusta Paper Corp. to a variety of flax equal to any formerly employed in Europe for the purpose. This flax is now much cultivated in North Carolina and serves not only for high grade cigaret papers but also for airmail paper and other fine qualities of writing paper.

NEW LINEN PROCESS. Ray Freedman. *Textile Bull. 68*, No. 4, 31 (April 15, 1945). News note concerning a chemical method of retting seed flax straw to obtain linen fibers. The process has been developed on an experimental scale at the Univ. of Minnesota but has not yet been reduced to commercial practice.

COTTON LINTERS. Edgar H. Lawton, W. F. Bowald & A. L. Durand, Nat'l Cotton Seed Producers Assoc'n. *Cotton & Cotton Oil Press 46*, No. 10, A11-12 (May 19, 1945). Postwar uses of cotton linters must meet severe competition from wood pulp, synthetic products and imported cotton linters. Use of linters in making nitrocellulose will be sharply reduced when military requirements cease. Probably use in high tenacity rayon yarns will increase.

MILKWEED FLOSS. Boris Berkman (to Milkweed Products Development Corp.). USP 2 375 186, May 8. Milkweed or kapok floss is separated from the seed by drying the pod to not over 40% moisture content and compressing the pod with a shearing action to pull the cloth away from the seed.

MILKWEED GIN. Boris Berkman, Alfons R. Bacon & Carl Weber (to Milkweed Products Development Corp.). USP 2 375 187, May 8; Can. P. 427 579, May 15. A machine for separating cloth from the seed and pod shells of milkweed or kapok plants utilizes a cyclone separator to which the cloth is airborne from the separating rolls.

CELLULOSE. Henry Dreyfus. Can. P. 427 612, May 22. Material from which cellulose is to be produced is first digested with hot caustic and then treated with H_2O_2 in acetic acid solution in presence of an oxidation catalyst such as manganese acetate.

RECENT TRENDS IN THE DEMAND FOR AMERICAN COTTON. Cyril O'Donnell, Univ. of Chicago Press, Chicago 1945; 78 pp.; price $1.00.

Reviewed in *Can. Textile J. 62*, No. 8, 12 (April 20, 1945).

I, 2. Animal

IODINE ON WOOL. S. Blackburn & H. Phillips, Wool Industries Research Assoc'n. *J. Soc. Dyers & Colourists 61*, 100-3 (April 1945). Wool reacts readily with I in aqueous KI solution at room temperature and may take up as much as 16% of I. Only a small amount is chemically combined, the remainder being adsorbed or in the anionic state.

Data are presented on rates of removal of adsorbed I from the treated wool by exposure to air and by treatment with detergent solutions.

FELTING. L. Bohm, Porritts & Spencer, Ltd. *Nature 155,* 547-8 (May 5, 1945). The peculiar frictional behavior of wool is a major cause of felting; the directional frictional effect is diminished by all known antifelting treatments, and the low felting capacity of wool in nonaqueous liquids is attributed to absence of any increase in the directional friction in such liquids.

MOHAIR. Irvin Hickman. *Textile Bull. 68,* No. 7, 18, 20, 41 (June 1, 1945). Illustrated description of methods and equipment used in making upholstery, rugs, carpets and other fabrics from mohair.

WATER ABSORPTION. Linus Pauling, California Institute of Technology. *J. Am. Chem. Soc. 67,* 555-7 (April 1945). Absorption of water by silk, wool and several nonfibrous proteins apparently begins with the attachment of 1 water molecule to each polar amina acid side chain. It is probable that the extremely low water absorption of nylon is related to the very compact fiber structure and consequent difficulty of penetration by water.

SILK. Irving Teplitz, Governor Fabrics Corp. *Rayon Textile Monthly 26,* 180-1 (April 1945). The causes which were responsible for large losses in the American market for silk before the war will largely be operative again after the war and silk will depend for its market chiefly on quality items in which cost is not a major factor. In the case of hosiery, for example, silk would need to be considerably cheaper than nylon to compete since nylon has longer wearing quality.

WOOL INDUSTRY. T. E. Thompson. *Textile Recorder 62,* No. 744, 43-4; No. 745, 43 (March, April 1945). To meet the postwar competition of animalized cellulosic rayon and of artificial and synthetic wool substitutes, the wool industry must rely on new processes and chemical modifications of wool.

I, 3. Artificial (derived from natural products)

ALGINIC ACID. W. T. Astbury, Leeds Univ. *Nature 155,* 667-8 (June 2, 1945). Alginic acid fibers at ordinary humidity give a well oriented x-ray diagram, with evidence of a structure similar to that of cellulose.

FIBER BLENDS. Bill McComb. *Rayon Textile Monthly 26,* 225-6 (May 1945). Some fundamental principles which must be observed in blending the newer artificial and synthetic fibers are discussed. Blending is a special field for experimental development.

PECTATE FIBERS. K. J. Palmer & H. Lotzkar, Western Regional Research Laboratory, USDA. *J. Am. Chem. Soc. 67,* 833-4 (May 1945). Dried sodium pectate fibers are strong and pliable with a remarkably high degree of crystalline orientation. These fibers are best made by making a pectate acid fiber and then converting it to sodium pectate. The pectate acid fiber may be made by extrusion into 85% alcohol acidified with HCl.

SEAWEED RAYON. J. B. Speakman, Leeds Univ. *Nature 155,* 655-7 (June 2, 1945). Alkali-resistant fibers can be made by treating alginic acid yarn with basic acetates, or by cross-linking alginic acid yarn with formaldehyde. Strengths up to 2 g/denier have been obtained. Alginate yarns have strong affinity for basic dyes and can also be dyed with certain direct dyes. Yarns from seaweed may become highly important in the textile industry.

ALGINATE FIBERS. Horace J. Hegan & John H. Given (to Courtlands, Ltd.). USP 2,375,650, May 8. Artificial filaments or films are made by reacting alkaline earth alginates with an alkali metal salt in aqueous solution and extruding the resulting mixture of alkali metal alginate and precipitated alkaline earth salt into a setting medium.

SYNTHETIC FIBERS IN RELATION TO AMERICAN COTTON. Morris R. Cooper & Horace E. Porter, Agricultural Economics Bur., USDA, Washington, Jan. 1945; 23 pp.; gratis.

I, 3a. Cellulosic rayons

RAYON AND NYLON. Anon. *DuPont Mag. 39,* No. 2, 2-6 (May-June 1945). The duPont rayon dept. has supplied military needs with high tenacity rayons for trucks and aircraft tires, parachutes, insulated wire and many other uses. Nylon has supplied parachutes, ropes for mountain troops, tow lines, insect screens and a variety of applications of plastic nylon.

RAYON DEVELOPMENT. Fredric Bonnet, Am. Viscose Corp. *Rayon Textile Monthly 26,* 219-21 (May 1945). Industries in related fields of production aid in the development of rayon as a garment and domestic fabric. New resin finishes, improved dyeing methods and improvements in laundering practice have all been beneficial to the rayon market.

SYNTHETIC FIBERS. Rene Bouvet, Am. Viscose Corp. *Am. Dyestuff Reptr. 34,* P187-8, P193 (May 7, 1945). Although 2 g/denier was a fair strength for rayon a few years ago, yarn showing 3.5 g/denier is now in commercial production and experimental products have reached 6 g/denier. Many excellent effects can be achieved by spinning on the cotton system, originally designed for short staples up to 2″ but now in some modern equipment capable of handling staple up to 3″. Some of the

recent rayons and other synthetics are especially useful in blends with wool and may be expected to appear in postwar carpets and rugs.

PROCESSING RAYOLANDA. Courtaulds, Ltd. *Textile Weekly 35,* 214, 218, 220, 222, 266, 268, 270, 316, 318, 320, 322, 500, 502, 504, 506, 508, 510, 690, 692, 882, 884, 886 (Feb. 2, 9, 16; March 16; April 13, May 11, 1945). Rayolanda is a precision rayon staple fiber having affinity for wool dyes although chemically it contains no protein. It is particularly suitable for blending with wool. Directions are given for spinning, weaving and dyeing Rayolanda in a variety of ornamental effects.

RAYON SPINNERETS. C. C. Downie. *Silk & Rayon 19,* 440-1, 449 (April 1945). Illustrated description of methods and equipment employed in plating, perforating and polishing rayon spinnerets to obtain the high precision required by modern production standards. An alloy which is now popular for spinnerets is Au:Pt 70:30.

ESTERIFICATION. Robert W. Moncrieff & Harold Bates (to Celanese Corp. of Am.). USP 2 372 386, March 27. Yarns, foils, films and the like are esterified without destroying their structure by heating in a nonsolvent liquid and a mixed anhydride of a polycarboxylic acid with an aliphatic acid not higher than valeric acid, and with a mixed anhydride of a long chain and a short chain aliphatic acid.

ACETATE RAYON. Paul W. Morgan (to E. I. duPont de Nemours & Co.). USP 2 375 864, May 15. Acetate rayon yarn or fiber is crinkled by treating in the relaxed state with a 10% aqueous solution of ethylene-glycol monobutyl ether at about 60°C.

SPINNERET. Bernhard Wempe. USP 2 376 742, May 22 (vested in Alien Property Custodian). Spinnerets are made by projecting pins from the face of a guide, molding a plastic material against the guide and around the ends of the pins, retracting the pins while the material is still plastic, hardening the material and trimming its perforated face.

ACETATE YARN. Francis P. Alles (to E. I. duPont de Nemours & Co.). USP 2 376 890-1, May 29. Freshly spun acetate, while still in the gel state, is impregnated with corn syrup and then dried. As a means of preserving the affinity of wet spun acetate yarns for direct, acid and chrome dyes the yarn is impregnated while still in the gel stage with a solution containing up to 10% of polytriglycol adipamide.

DELUSTERING FIBERS. Georges de Niederhäusern (to Durand & Huguenin S. A.). USP 2 376 908, May 29. Lustrous filaments are delustered with a white pigment and a high-boiling hydrocarbon or derivative thereof in an aqueous dispersion containing a protein fixative such as casein.

TOW GUIDE. Seddon C. Nelson (to Am. Viscose Corp.). USP 2 377 173, May 29. A filament guide has 2 or more spaced guide members formed integrally with a support from which they project laterally. Each guide unit has 2 side walls forming curved guide surfaces, so shaped that the successive guide surfaces merge gradually into each other.

TREATING RAYON. Arthur Lyem (to Celanese Corp. of Am.). USP 2 377 434, June 5. The serimetric properties of acetate or like rayon filaments, yarns or ribbons are improved by continuous passage through a solution of acetaldehyde and xylene (1:1) at a speed which permits not more than 2 minutes contact, and immediately removing the solution by evaporation.

TREATING RAYON STAPLE. Am. Viscose Corp. Brit. P. 563 630. Apparatus for successive liquid treatments of rayon staple has a conveyor with overlapping perforated plates which can be flexed in both directions. Sprays containing the successive treating liquids are placed along the conveyor and suction boxes are placed below the conveyor under each spray.

SPINNERET. Baker & Co., Inc. Brit. P. 563 648. A spinneret is made of a Pt-Rh-Ru alloy in which the respective proportions are 90-95%, 3-7.5% and 2-5%. This alloy is highly resistant to chemical attack.

RAYON STAPLE. Am. Viscose Corp. Brit. P. 563 983. Apparatus for producing rayon staple with variable staple lengths has a device for directing alternate cuts of the rayon into separate discharge channels.

VISCOSE RAYON. Arthur F. F. Mothwurf (to Budd International Corp., Edward G. Budd Mfg. Co., to Industrial Rayon Corp.). Can. P. 427, 212, May 1. In making viscose rayon the precipitant is removed and a precipitant-free zone for desulfurization is established by a rinse water treatment in which the rinse water contains the desulfurizing agent. An avivifying treatment is applied independently of desulfurization.

VISCOSE THREAD. Edwin H. Sharples (to Courtaulds, Ltd.). Can. P. 427 363, May 8. Viscose thread is made by extruding a viscose solution into an aqueous coagulating bath containing H_2SO_4, a metal salt and 2-undecylbenzimidazole.

SPINNING VISCOSE. Lynwill K. Spangler & Harold C. Pratt (to Am. Viscose Corp.). Can. P. 427 633, May 22. A spinning solution for rayon manufacture is handled in a series of tanks, each having a main header and an auxiliary header with valve control. A conduit to which these headers feed spinning solution from the supply tank is

arranged for pumping the solution from selected supply tank sources to either end of a central tank.

RAYON & SILK TRADES. 50th annual edition, Davison Publishing Co. Ridgewood, N. J. 1945. Reviewed in *Cotton 109*, No. 4, 114 (April 1945).

I, 3b. Protein fibers

PROTEIN FIBERS. W. T. Astbury, Leeds Univ. *Nature 155*, 500-1 (Apr. 28, 1945). The globular proteins are converted, by denaturation and aggregation, into fibrous proteins giving diffraction patterns like that of beta-keratin. Structures are illustrated by x-ray diffraction patterns of fibers from egg white and other proteins.

KERATIN FIBERS. Henry B. Bull, Northwestern Univ. Medical School. *J. Am. Chem. Soc. 67*, 533-6 (April 1945). The influence of temperature on the elasticity of keratin fibers has been studied by tests with human hair. Exposure of hair to a heat of 60° would presumably not break disulfide or other covalent bonds but nevertheless it alters the stress-strain behavior. The force of contraction due to internal energy is in general much greater than that due to the entropy change. In this respect the elasticity of hair is in sharp contrast with that of rubber.

CASEIN WOOL. R. F. Peterson, T. P. Caldwell, N. J. Hipp, R. Hellbach & R. W. Jackson, Eastern Regional Research Laboratory, USDA. *Ind. & Eng. Chem. 37*, 492-6 (May 1945). The effect of alkalinity, stretch and conditions of hardening on strength of casein fibers were investigated. In acid-precipitated casein fibers spun on a laboratory spinning machine it was found possible, by stretching the fibers, to increase their tensile strength to 0.7 g/denier. A further increase to 1 g/denier was achieved by a simultaneous stretching and partial hardening process, using formaldehyde in presence of Al sulfate.

PROTEIN FIBERS. F. R. Senti, M. J. Copley & G. C. Nutting, Eastern Regional Research Laboratory, USDA. *J. Phys. Chem. 49*, 192-211 (May 1945). Globulins from milk, eggs, corn, peanuts, soybeans, tobacco seed and blood have been converted into a fibrous form, the x-ray diffraction pattern of which is nearly identical with that of beta-keratin from stretched hair or wool. Conversion from globular to fibrous proteins is effected by heat, hot water and mechanical shear. Wet strength of the protein fibers is increased by acetylation and by hardening with formaldehyde or with quinone.

HARDENED PROTEINS. R. L. Wormell & M. A. G. Kaye, Courtaulds, Ltd. *J. of the Soc. of Chem. Industry 64*, 75-80 (March 1945). Reactions of proteins with formaldehyde are studied and further research is recommended on the changes in

physical properties of protein fibers after reacting with formaldehyde.

I, 4. Synthetic

COAL AND TEXTILES. M. Lelyn Branin, Bituminous Coal Institute. *Mechanization 9*, No. 4, 106-7, 109, 111; No. 5, 78-9, 81, 83 (April, May 1945). Plastics and synthetic resins show promise of revolutionizing the textile industry as thoroughly as did the discovery of synthetic dyes. Plastics, like dyes, are derived largely from coal. Some of the synthetics derived from coal are themselves convertible into fibers, while others are useful for treating fibers in a great variety of ways. Another relation of textiles to coal is in the use of acetic acid and other chemicals obtainable from coal in making rayon and synthetic fibers, or chemical coatings or impregnating compositions for fabrics.

PLASTIC SCREENS. Sanford Levine. *Plastics 2*, No. 5, 50-1, 101 (May 1945). Insect screens made of vinylidene resin or of nylon or other plastics have numerous advantages over metal and can be made in any desired color. They do not rust, are easy to clean and holes punched through the screen are self-sealing merely by working the displaced monofils back into position.

I, 4a. Nylon type

NYLON FABRICS. P. D. Atwood, E. I. duPont de Nemours & Co., Inc. *Am. Dyestuff Reptr. 34*, P184-6 (May 7, 1945). Steam-setting of nylon fabric is an important factor in proper finishing and studies are now in progress to compare the effects of steam-setting with that of dry heat setting. The best nylon size now known is a water-soluble polyvinyl alcohol known as PM-90 size. Nylon is slow to recover its original length after being stretched, a property which must be taken into account in weaving. Control of elastic behavior and shrinkage is highly important.

NYLON-WOOL BLENDS. L. Bellwood. *Textile Recorder 62*, No. 743, 42-3, 54 (Feb. 1945). Potential uses of nylon in wool fabrics include stripe and check effects, double plain cloth, tropical suitings and woven names or emblems in selvedges.

NYLON YARN. D. A. S. Lee, Can. Industries, Ltd. *Can. Textile J. 62*, No. 10, 25 (May 18, 1945). A brief discussion of war uses for nylon and of the present experimental program looking to postwar uses.

I, 4b. Vinyl and vinylidene polymers and copolymers

SCREEN FABRIC. Harry W. Thomas. USP 2 375 597, May 8. Thermoplastic monofils are woven into a screen fabric which is then heated under tension to cause the monofils to crimp at their

intersections so that on cooling they acquire a permanent resilient set.

DRY SPINNING. Paul W. Morgan (to E. I. duPont de Nemours & Co.). USP 2 376 934, May 29. In dry-spinning films or filaments from a liquid containing a water-insensitive synthetic polymer about 10-60% of a glycol polyformal is added together with about 0.5 to 10% of a nitrogen base to render the product receptive to direct, acid and chrome dyes.

FLY SWATTER. Victor J. Mueller. USP 2 377 439, June 5. An open mesh fly swatter fabric is made of plastic filaments interwoven with reinforcing metal wire at sufficient intervals to assist in maintaining the shape of the fabric.

CRINKLED FIBERS. Wm. B. Robbins (to Dow Chemical Co.). USP 2 377 810, June 5. Filaments of polyvinylidene chloride are crinkled by spraying first with a nonsolvent liquid while heating the filament above 90° C, and then cold-stretching the filament.

VINYL RESIN FILAMENTS. R. P. Roberts, E. B. Johnson & H. H. Taylor (to Brit. Celanese). Brit. P. 563 960. Filaments which will swell or dissolve in water are made by extruding a solution of a partially esterified polyvinyl ester into a setting medium, the ester group content in the resin being not over 12% of the theoretical maximum.

SARAN, THE MAGIC THREAD; SARAN FOR BRAIDED CONDUCTORS AND CABLES. Booklets of Nat'l Plastic Products Co., Edenton, Md. 1945.

Reviewed in *Rayon Textile Monthly 26,* 103 (Feb. 1945).

I, 4c. Condensation resin fibers

SYNTHETIC YARNS. Seymour G. Saunders & Harry Morrison (to Chrysler Corp.). USP 2 376 511, May 22. A thermosetting synthetic resin is converted into yarn by dissolving it in a volatile solvent and extruding threads through an orifice into hot air to set the filament. The final cure is effected by running the filaments under stress between spools through a curing oven. The resin may be a phenolic or urea-formaldehyde resin or a vinyl polymer such as a vinyl butyral resin.

I, 5. Applications as fibers

COTTON PLUGS. Orton K. Stark, Miami Univ. *Science 101,* 521 (May 18, 1945). A motor-driven machine for making cotton plugs to be used in culture tubes is easily assembled and is a great time saver in biological laboratories.

FILTER. Wm. G. Burhans. USP 2 375 345, May 8. A filter cartridge is made of a fabric bag with a semirigid perforated spiral wall inside the bag and fibrous filter material between the convolutions of the spiral wall.

SCOURING PAD. Lewis K. Rimer (to James H. Rhodes & Co.). USP 2 375 585, May 8. Scouring pads are made by extruding filaments from a plastic composition, interspersing an abrasive powder with the filaments, forming them into a web, folding sheets of the resulting material and sealing the edges to form pads.

FLOCK-COATED DIE. Richard E. Leary (to Canadian Industries, Ltd.). Can. P. 426 519, April 3. A die for changing thermoplastic sheets into polished, smooth, 3-dimensional curved surfaces is made by coating a rigid form with a neopren or chlorinated rubber cement, then with cotton flock and finally with a lubricant.

ABSORBENT SHEETING. Carl G. Muench & Fergus A. Irvine (to Celotex Corp.). Can. P. 427 362, May 8. Porous absorbent sheets are made from a mixture of rag fibers and pulp of a lignocellulosic material which is softened by heat in the defibrated product. The sheeting thus made is used in roofing and flooring compositions.

I, 5b. Plastic filler

FIBROUS THERMOPLASTICS. Philip Goldstein & Harold R. Gillette (to Federal Electric Co., Inc.). USP 2 376 687-8, May 22. A thermoplastic product is made by felting a mixture of cellulosic fiber with powdered pine wood pitch extract which is modified with an oxide or hydroxide of Zn, Ca, Pb or Mg. The material is consolidated under pressure at a temperature sufficiently high to cause flow of the resin.

I, 5c. Coated or impregnated products

PAPER CAPACITORS. L. J. Berberich, C. V. Fields & R. E. Marbury, Westinghouse Electric Corp. *Proc. I. R. E. 33,* 389-97 (June 1945). The large demand for impregnated paper capacitors in military electronic equipment necessitated a study of ways of prolonging capacitor life. Capacitors impregnated with mineral oil have the broad dissipation-factor peaks which are characteristic of cellulose. In capacitors impregnated with conventional Inerteen (a chlorinated biphenyl with about 5 Cl per molecule) the polar behavior of the cellulose is masked by that of the liquid and the curves have much higher and sharper peaks than in capacitors impregnated with mineral oil. When the impregnated liquid is special Inerteen (a blend of conventional Inerteen with a chlorinated ethylbenzene) the curves have wider peaks. Life of capacitors has been increased to more than 3000 hours by adding up to 0.5% of certain stabilizers to the impregnating liquid.

RUBBERIZED SHEET. Paul W. Pretzel. USP 2 375 244-5, May 8. A waterproof felted sheet is made by pulping asbestos in water, adding at least twice as much cellulose fiber as asbestos and mixing a vulcanizable rubber latex with the pulp to

precipitate rubber in a uniform film on the coated cellulose fiber. In another method cellulose is beaten in water until the fibers are hydrated and $Al(OH)_3$ is precipitated on and in the fibers from the surrounding solution, after which rubber is deposited on the treated fibers from an aqueous dispersion.

ABRASIVE DISC. Frederick A. Upper (to Carborundum Co.). USP 2 375 263, May 8. Grinding wheels are made by incorporating an abrasive powder in layers of felted fibrous sheet material and bonding together layers of the material to the desired thickness in disc shape.

IMPREGNATING WEB. Michele Croce (to Certain-Teed Products Corp.). USP 2 375 403, May 8. A felted fibrous web is impregnated with a thermoplastic saturant by passing the web over rolls through a melt of the saturant in such a way that the melt is applied to one face of the web and application is continued until it penetrates uniformly through to the other face.

TREATING FIBROUS WEB. Leonard Smidth. USP 2 376 200, May 15. Fibrous cellulosic sheets are impregnated with a water-soluble low reaction product of urea and formaldehyde and a potentially acidic setting agent which is rendered acidic by heat at the proper time for setting the resin.

STABILIZED DIELECTRIC. James L. Hyde (to Sprague Specialties Co.). USP 2 377 630, June 5. A new dielectric for impregnating cellulosic materials is stabilized with a mixture of 5-10 parts of Tetralin to 100 parts naphthalene. The amount of stabilizer is 1-10% of the liquid halogenated hydrocarbon dielectric.

FELTING FIBERS. S. M. Freeman, F. Brownsett, Bakelite, Ltd. & N. W. Knewstubb (to Brit. Cotton Industry Research Assoc'n). Brit. P. 563 627. In felting resin-treated fibers a mixture of the fiber and resin binder is subjected to heat and pressure to lessen the bulk and prevent separation of the components.

RESINS ON FIBERS. E. I. duPont de Nemours & Co. Brit. P. 563 708-9-10-1-2-3. Stable resin dispersions which are substantive to animal fibers and to nylon are made by stirring a methacrylate ester monomer containing a small proportion of polymerization catalyst with an aqueous solution of a partially hydrolyzed polyvinyl acetate and a water-soluble salt of a heavy metal. Dispersions substantive to other types of fibers may be prepared by adding a cationic tension-reducing agent. The water-soluble heavy metal salt may be replaced by resin or both the resin and salt may be added. The mixture may be agitated, and the methacrylate ester may be partially polymerized before introducing it into the system.

TANKS. Max Skolnik (to Fibro-Mould Specialties, Inc.). Can. P. 427 192, May 1. A tank wall is built up by bonding layers of bitumen-impregnated fibrous sheet material together with layers of waterproof magnesium oxychloride cement composition, and a laminated bottom is joined to the wall thus formed.

CELLULOSE PRODUCTS. Charles S. Maxwell & Chester G. Landes (to Am. Cyanamid Co.). Can. P. 427 321, May 8. The wet strength of cellulosic sheet materials is improved by application of a cationic melaminealdehyde resin in aqueous dispersion. The sheeted fibers are then heated to cure the resin.

II. INORGANIC FIBERS

II, 1. Natural

ASBESTOS YARN. Am. Cyanamid Co. Brit. P. 563 678. The mechanical strength of asbestos yarn is greatly increased by impregnation with a melamine-formaldehyde resin syrup which can be cured under alkaline conditions. Results are reported for straight asbestos yarns and for asbestos yarns containing 10% cotton.

PALIGORSKITE, a possible asbestos substitute. Information Circular 7313, US Bur. of Mines, Washington 25, 1945; gratis.

Reviewed in *Chem. & Eng. News 23,* 838 (May 10, 1945).

II, 2. Artificial

GLASS FABRIC. Games Slayter, Owens-Corning Fiberglas Corp. *Am. Dyestuff Reptr. 34,* P189-90, P193 (May 7, 1945). Commercial glass fiber ranges from 0.22 to 0.38 mil in diameter and has tensile strength of the order of 300,000 psi, but experimental fibers as fine as 0.002 mil have tensile strengths as high as 3,500,000 psi. High strength, dimensional stability, incombustibility and electrical insulating power, coupled with immunity to mildew and rot, enable glass fibers to excel in a great variety of decorative as well as utility products. Uses are limited however, by the low resistance of glass fiber to repeated flexing or friction. Garment uses are therefore extremely limited.

GLASS FIBER. F. Neumann. Brit. P. 564 017. A crucible furnace for making glass fiber has heaters for melting waste glass and electric heaters which heat the melt before it is drawn. The second heating is effected by a Pt strip having nozzles through which the glass passes. Heat is localized near the nozzles. Viscosity is easily controlled and the risk of thread breakage is diminished.

III. NONFIBROUS MATERIALS

Plastics Catalog, 1945. Plastics Catalog Corp. New York, 1945; 1178 pp.; price $6.00.

Reviewed in *Rayon Textile Monthly 26,* 206 (April 1945).

PLASTICS, SCIENTIFIC AND TECHNOLOGICAL. H.

Roland Fleck, Chemical Publishing Co., Brooklyn, N. Y., 1945; 325 pp.; price $6.50.

Reviewed in *Rayon Textile Monthly 26,* 206 (April 1945).

III, 1. Plastics, resins, rubber

SYNTHETIC RESINS. W. T. Astbury, Leeds Univ. *Chemistry & Industry 1945,* 114-6 (April 14, 1945). The x-ray diffraction patterns of plastics and thermoplastics reveal much information about their structure. Photographs of x-ray diffraction patterns are shown for phenolic and urea resins, stretched and contracted Vinyon, unoriented and fibrous Polythene, a casein product, nylon and stretched and unstretched polyisobutene.

COATED PAPER. John B. Cleaveland, Cleaveland Laboratories & Mfg. Co. *Plastics 2,* No. 5, 52-3, 102, 104 (May 1945). Plastic coatings on cellophane, paper, metal foil or paper with fabric backing have many protective as well as decorative uses in packaging. Heat-sealing coatings are particularly effective and it may even be that postwar wall paper can be applied with such an adhesive.

THERMOPLASTICS. Wm. I. Taylor (to Celanese Corp. of Am.). USP *2 372 695,* April 3. A thermoplastic is produced in fibrous or cellular form by plasticizing it with a liquid, heating the mixture under pressure and suddenly releasing the pressure.

PLASTICS AND INDUSTRIAL DESIGN. John Gloag. With a Section on the Different Types of Plastics, Their Properties and Uses, by Grace Lovat Fraser. George Allen and Unwin, Ltd., London, 1945; 166 pp.; price 10s. 6d.

III, 1a. Cellulose derivatives

TRANSPARENT FOILS. Anon. *Silk & Rayon 19,* 427-9, 444 (April 1945). A review of technical progress in the manufacture of viscose foils for use as transparent wrapping, as ribbons, yarns, braids and the like.

VULCANIZED FIBERS. G. A. Albert, Nat'l Vulcanized Fiber Co. *Modern Plastics 22,* No. 7, 32-3, 77 (March 1945). Vulcanized fiber is made by hardening cotton cellulose chemically, removing the chemical and calendering the dried product. The resulting horn-like plastic is tough and resilient with high mechanical strength and good electrical properties. It is thermoplastic and can be shaped by immersion in hot water or in a live steam chamber. Articles made in this way weigh only about ½ as much as aluminum and have high resistance to wear and abrasion.

PLASTICIZERS. Leonard F. Pinto. *Plastics 2,* No. 5, 58, 60, 62, 108, 110 (May 1945). The effects of phthalate, phosphate and other ester plasticizers and of raw or blown castor oil and Hercolyn on nitrocellulose, cellulose acetate and cellulose ether plastics are discussed with reference to uses of the plasticized products. Effects of plasticizers on load-elongation curves and other properties of the cellulosic plastics are shown in tables and curve charts.

CELLULOSE ACETATE. Arnold M. Sookne & Milton Harris, Nat'l Bur. of Standards, *Ind. Eng. Chem. 37,* 475-7 (May 1945). Up to a number-average molecular weight of 130,000, molecular weights are proportional to the intrinsic viscosities of cellulose acetate fractions in acetone conditions. The relative homogeneity of these fractions with respect to molecular magnitude have been estimated as compared with the initial material.

CELLULOSE ACETATE. Arnold M. Sookne & Milton Harris, Nat'l Bur. of Standards. *Ind. Eng. Chem. 37,* 478-82 (May 1945). Data are presented on tensile strength, elongation and flexing strength of film made from a series of acetate fractions and blends. Relations between these properties and molecular magnitude are discussed.

ABSORBENT. Clifford I. Haney & Mervin E. Martin (to Celanese Corp. of Am.). USP *2 372 669,* April 3. A cellulose ester to be used as an absorbent is comminuted, treated with up to 40% of a swelling medium, heated above the normal boiling point of the swelling medium under a pressure of at least 1000 psi and exploded by suddenly releasing the pressure. The resulting cellular mass is treated with a hydrolyzing agent.

SHOE UPPER. Stanley P. Lovell & Frank H. Russell (to Beckwith Mfg. Co.). USP *2 373 404,* April 10. The outer layer of a shoe upper is bonded firmly to its lining by a layer of stiffening material composed of ethylcellulose, dewaxed gum damar and a blend of toluene and acetone.

ETHYLCELLULOSE. John S. Tinsley (to Hercules Powder Co.). USP *2 375 708,* May 8. A monoether of hydroquinone is used as a stabilizer for ethylcellulose in plastic compositions.

CELLOPHANE PRESERVATIVE. Max V. Noble (to E. I. duPont de Nemours & Co.). USP *2 375 868,* May 15. Transparent cellulose foils are preserved by impregnation with a small proportion of an alkyl or alkenyl (e. g. octyl or octadecenyl) sulfate or sulfonate, or a compound of the type of Na isopropylated naphthalene-sulfonate.

CELLULOSE ESTERS. Henry Dreyfus. USP *2 376 422,* May 22. Cellulose mixed esters are made by esterifying a cellulose ester of an organic acid with a different organic acid (as its anhydrid) in presence of an organic dichloride and a halide of Fe, Sn or Zn serving as catalyst.

METHYL CELLULOSE. Peter R. Wenck (to Dow Chemical Co.). USP *2 377 834,* June 5. Syneresis of methyl cellulose in viscous aqueous systems is minimized by adding a water-soluble cellulose glycolate salt.

STABILIZED ACETATE. H. Dreyfus. Brit.

P. 563 287. Cellulose acetate is stabilized against degradation by ultraviolet light, by introducing not over 15% of a high boiling aromatic ester such as 2-naphthyl salicylate.

CELLULOSE ESTER. Brit. Celanese Ltd. Brit. P. 563 560. In preparing cellulose for esterification it is swollen in alkali, washed with an organic solvent which removes water as an azeotropic mixture, and then esterified. The organic solvent may be nitromethane or one of the lower alkyl acetates.

RIBBON. William I. Taylor (to Henry Dreyfus). Can. P. 426 930, April 17. Heavy filaments or ribbons which are improved in stiffness, resilience and strength are made by hot extrusion of a plasticized cellulose ester such as cellulose acetate-stearate. The cross sectional area of the extruded product is controlled by tension. After extrusion the plasticizer is removed and the filament or ribbon is hydrolyzed. Cellulose acetate-butyrate may also be employed.

SLIDE FASTENER. Daniel C. Lipman (to Camille Dreyfus). Can. P. 427 264, May 1. A slide fastener for men's trousers has at least 1 stringer formed of a stiffened plasticized acetate. The fastener is so constructed as to prevent buckling and puckering of the material.

CELLULOSE GLYCOLIC ACID. Wm. R. Collins, Richard D. Freeman & Robert C. Anthonisen (to Dow Chemical Co.). Can. P. 427 372, May 8. Cellulose is impregnated with an aqueous solution of chloroacetic acid or a chloroacetate, the treated cellulose is then impregnated with caustic and the reaction is carried on until an alkali metal cellulose glycolate is formed.

MOTHER OF PEARL EFFECT. A. F. Caprio (to Celluloid Corp., to Can. Celanese Ltd.). Can. P. 427 559, May 15. Decorative mother of pearl effects are obtained with cellulose acetate or synthetic resin plastics by incorporating an ammunium phosphate of Mg, Mn or Zn in the plastic.

CELLULOSE ACETATE. Bruce S. Farquhar (to Can. Industries Ltd.). Can. P. 427 810, May 29. The properties of cellulose acetate are improved by pressing the acetate into tablets under a pressure of 10 000 to 40 000 psi and grinding the tablets to the desired degree of fineness.

FABRICATING METHODS FOR LUMARITH, CELLULOID AND SIMILAR THERMOPLASTIC MATERIALS. Handbook of Celanese Plastics Corp., 180 Madison Ave., New York City, 1945; price $1.00 (1 copy free to industrial executives).

Reviewed in *Chem. & Eng. News 23,* 855 (May 10, 1945).

III, 1c. Condensation polymer resins

POLYAMIDE RESINS. A. G. Hovey, General Mills Research Laboratory. *Modern Plastics 22,* No. 9, 27-8, 59 (May 1945). A new type of polyamide resin differs from nylon in the fact that the polybasic acid ingredient is derived from fatty acids such as the acids of linseed oil. The resins are not fibrous but are useful as adhesives and coatings on paper, fabrics and other materials such as pressure-sealing paper or cloth wrapping materials.

III, 1d. Rubbers and rubber derivatives

PLIOFILM. Anon. *Silk & Rayon 19,* 444 (April); *Textile Mfg. 71,* 173 (April 1945). News note concerning pliofilm, Goodyear's rubber derivative wrapping foil which is transparent, tough and impermeable to gases. Although now confined largely to military uses, such as protective wrappings for airplane parts in shipment, there are numerous postwar opportunities for use of this type of foil as dustproof, moistureproof garment bags and in textile packaging.

DISPERSION. Andrew Szegvari & Adrian H. Feikert (to Am. Anode Inc.). USP 2 373 613-4-5, April 10. A composition for treating fibrous materials contains a phenol-aldehyde resin, a high polymer of isobutene and natural rubber; or shellac with natural, synthetic or reclaimed rubber and a high olefin polymer; or a high olefin polymer, a tack-reducing butadiene: acrylonitrile polymer and natural, synthetic or reclaimed rubber.

III, 2. Adhesives; gums; starches

GUM DISPERSION. Ben F. Buchanan (to Am. Maize-Products Co.). USP 2 376 656, May 22. A powdered gum is dispersed in an aqueous solution of a lactate, using 0.1 to 5% of lactate calculated on the weight of gum.

B. F. GOODRICH NATURAL & SYNTHETIC RUBBER ADHESIVES. Bulletin of B. F. Goodrich Co., Akron, O., 1945.

Reviewed in *Textile Age 9,* No. 5, 122 (May 1945).

III, 3. Surface active compounds, textile assistants

SOLVENTS. Kemmek. *Fibers, Fabrics & Cordage 12,* 161-2 (April 1945). A brief review of solvents employed in cloth manufacture, their properties, composition and uses.

GLYCERIN. Georgia Leffingwell & Milton A. Lesser. *Rayon Textile Monthly 26,* 194-5 (April 1945). Glycerin is a versatile textile chemical and is also a source of numerous derivatives having uses in textile processing. Uses in sizes, finishes, resin treatments and dyeing are reviewed. Bibliography (30 references).

WETTING AGENT. Heinrich Bertsch. Can. P. 427 726, May 22. Fatty acid chlorides derived from coconut oil or other fats are converted into alkanolamides by reaction with ethanol amine and the products are employed as wetting agents, detergents and sudsing agents.

DIAMOND CHLOROWAX. Bulletin of Diamond Alkali Co., Pittsburgh 22, Penna. 1945.
Reviewed in *Rayon Textile Monthly 26,* 204 (April 1945).

HIGH MELTING POINT SYNTHETIC WAX. Bulletin of Glyco Products Co., Brooklyn, N. Y., 1945; 16 pp.
Reviewed in *Textile Colorist 67, 727* (April 1945.)

INDUSTRIAL APPLICATIONS OF "NATIONAL" AND "KARBATE" CARBON AND GRAPHITE PRODUCTS. Can. Nat'l Carbon Co., Ltd., Toronto, 1945; 16 pp.
Reviewed in *Can. Textile J. 52,* No. 6, 14 (March 23, 1945).

NONOXOL DCP. Miscellaneous Chemicals Service Leaflet No. 1, Dyestuff Division, Imperial Chemical Industries, Ltd. London 1944.
Reviewed in *Silk & Rayon 19,* 213 (Feb. 1945).

SYNTHETIC DETERGENT. Report NS, Solvay Process Co. (Product Development Section), New York City 6, 1945; 4 pp.; gratis.
Reviewed in *Chem. & Eng. News 23, 767* (April 25, 1945).

IV. FIBER TO YARN

NYLON YARN: Its Properties and Its Processes. Brit. Nylon Spinners, Ltd., Coventry, 1945.
Reviewed in *Rayon Textile Monthly 26,* 258 (May 1945).

PROCEEDINGS OF THE 2ND TEXTILE TEACHERS' CONFERENCE. Torridon, March 31 and April 1, 1944. Wool Industries Research Assoc'n.
Reviewed in *J. Soc. Dyers Colourists 61,* 53 (Feb. 1945).

Thread Guides. Bull. No. 444, Am. Lava Corp., Chattanooga, Tenn., 1945.
Reviewed in *Can. Textile J. 62,* No. 9, 12 (May 4, 1945).

IV, 1. Preparation for spinning

LUBRICATING FIBERS. Anon. *Am. Wool & Cotton Reptr. 59,* No. 18, 13, 15 (May 3, 1945). For lubrication of fibers to be handled on wool machinery an emulsion of 1 part oil to 4 parts water is effective. For cotton or rayon staple, handled on cotton machinery, only very light highly penetrating oils are satisfactory, in much smaller quantities than in the case of wool. Proper application of a suitable lubricant has many advantages.

CARDING. Anon. *Textile Weekly 35,* 734 (April 20, 1945). The relative merits of semi-combing and double carding are discussed. In general semi-combing permits improved results from slightly cheaper cotton as compared with double carding. A table of spinning data is presented. The new Nasmith comber is particularly suitable for making semi-combed yarns.

COMB SETTING. Durant Anthony. *Can. Textile J. 62,* 45, 55 (May 4, 1945). In setting the Noble comb, particular attention must be given to proper dabber settings since the dabbing brush is essential to production of first quality tops. For the same reason the brush must be kept in good repair. A mathematical formula is given for speed calculation.

COTTON CARDING. Elliot B. Grover & George H. Dunlap, School of Textiles, North Carolina State College. *Textile Research J. 15,* 97-162 (April 1945); Summary in *Textile Bull. 68,* No. 8. 19-20, 22, 25, 58 (June 15). A detailed study of factors influencing production capacity of cotton cards has resulted in conclusions and recommendations enabling ordinary capacity to be substantially increased. Stated in general terms which are not specifically applicable to any existing card without individual consideration of the machine and its operating conditions, it may be said that increasing overall card speed may increase production as much as 1/3 with a drop of not more than 1/3 of a grade in yarn appearance. This expedient increases waste and power consumption by increasing flow of cotton through the cards at the same cylinder speed. Production may be increased over 50%, usually with a drop of not more than 1/3 of a grade in yarn appearance. This expedient decreases waste and power consumption per pound of cotton. Neither of these 2 methods has any significant effect on yarn strength. The second method is preferable for several reasons but in some cases a combination of the 2 methods may be better still.

OPENING ROOM. J. R. *Textile Recorder 62,* No. 745, 36-8, 68 (April 1945). British and American practice in the opening room are compared with respect to layout and the types of machinery employed. American practice permits about 4 times as much mixing capacity in the mixing room as British practice.

CLEANING COTTON. I. M. Shopman. *Textile Bull. 68,* No. 5, 18, 20, 44 (May 1, 1945). Principles to be observed in setting up a wartime cleaning schedule are discussed in particular relation to mills producing coarse yarns. Proper care and maintenance of machinery through the opening, picking, carding and roving operations are essential.

CONTROL DRAFT. I. M. Shopman. *Textile Bull. 68,* No. 6, 26, 28, 49 (May 15, 1945). The functions and operation of sliver lap winders and 5-roll controlled draft drawing systems are discussed in relation to successful operation of these machines in textile mills.

CARD. Ernest Clark (to Abington Textile Machinery Works). USP 2 376 661, May 22. A card is equipped so that the driven comb can be stopped at its bottom position while a holding plate holds the previously formed web until the comb is started again.

FIBER TRANSFER. Leslie M. Ballamy & Richard H. Sheepshanks. USP 2 377 123, May 29. A device for transferring loose fiber from an endless

pervious flexible belt to a separate surface includes a tube around which the belt makes its turn. Air or compressed gas is blown through perforations in the tube to support the moving layer of fiber in its transition from the belt to the adjacent surface.

FIBER DELIVERY. Aktiebolaget Gerk., Arehus Mekaniska Verkstad. Brit. P. 563 281. A fiber feed device has a flexible conduit curved in the direction of its length and rotatably connected to an outlet from the feed receptacle. Rotation of the conduit delivers the fibrous materials to the receptacle.

COMBER OPERATION. G. W. & J. I. Nasmith (to District Bank, Ltd.). Brit. P. 563 282. A simple device for a Nasmith comber greatly increases production by increasing the length of fleece without requiring any increase in stopping off feed of the rolls.

WEB DELIVERY. E. Hargrave & F. Kitchen. Brit. P. 563 915. Delivery of card webs on scribbler cards is facilitated by a lattice belt passing around rolls which are chain-driven from the bottom crushing roll. Use of the lattice and conveyor accelerates the back doffer of the scribbler, thus resulting in better carding.

CARD DRIVE. J. Pickles. Brit. P. 564 035. An eccentric drive for card rubbing rolls has a mechanism for reciprocating the rubber rolls so that higher speeds are achieved with silent running and less vibration. Each eccentric has a nonmetal flexible coupling.

IV, 2. Spinning, doubling, twisting, winding

RING SPINDLES. Anon. *Textile Mfr. 71,* 139, 162 (April 1945). General instructions are given for installation and maintenance of ring spindles, with particular attention to proper lubrication.

COTTON SPINNING. Anon. *Textile Recorder 62,* No. 743, 38-9, 62 (Feb. 1945). The Report of the Cotton Textile Mission to the USA is critically reviewed. The British mills are more efficient than would appear from the Report, but improvements are needed. Examples are a system which would permit stripping the card roll and doffer in one operation; vacuum equipment for removing cylinder licker-in fly and flat strips; use of electric lap carriers, and larger sliver cans.

MULE CLEANER. Anon. *Textile Recorder 62.* No. 745, 54, 57 (April 1945). Illustrated description of a mechanical mule cleaner invented by H. Bentham of the Persian Mills, John Harwood & Sons, Bolton, England.

OILING SPINDLE TOPS. Anon. *Textile Weekly 35,* 778, 782 (April 27, 1945). Present haphazard practice in oiling spindle tops result in numerous defects but is a direct result of spindle construction which does not encourage correct oiling. A nonsplash spindle bearing is needed.

RING SPINNING FRAME. J. Calvert, Howard & Bullough, Ltd. *Textile Weekly 35,* 821-2, 824, 826, 828, 866, 868, 870, 880 (May 4 & 11, 1945); discussion 930, 932, 934 (May 18). The principles of ring spinning have not changed and machine design for modern ring spinning frames is concerned largely with the use of better materials and with achieving higher mechanical efficiency. Some features of modern ring spinning frames are discussed and illustrated.

LONG DRAFT APRON. Bruce R. Billmeyer (to Armstrong Cork Co.). USP 2 377 316, June 5. An apron for fiber drawing has a tube of twine wound in a spiral and reinforced by an outer fabric layer to which a wear-resisting facing is applied.

SAFETY COVERS. J. & L. Gleave. Brit. P. 563 693. A safety cover for the draft roll gearing of a ring spinning frame has an arm on the starting rod connected to a catch lever on the frame. A second catch lever is placed on the opposite side of the headstock in such a position that movement of the levers in one direction is prevented while the covers are open.

WET SPINNING. W. Gibson. Brit. P. 563 863. A spindle for wet spinning frames utilizes pirn tubes with a yarn laying-on member and a device for traversing the tube and the laying-on member. The full pirn can be automatically doffed and left on the upper cut portion when the spindle is lowered to starting position.

BUILDER MOTION. Saco-Lowell Shops. Brit. P. 563 898. A builder motion for ring spinning frames has a device for reversing the straight line motion of a primary spinning element and 2 devices for determining the positions of the points at which reversal should be effected.

IV, 2a. Cotton, vegetable fibers

SPINNING APRON. Abraham L. Freedland & Henry M. Bacon (to Dayton Rubber Mfg. Co.). Can. P. 427 830, May 29. A long draft spinning apron for textile machinery is made from Thiokol reinforced with inextensible cord spaced midway between the driving surface and the working surface of the apron, while the driving face is reinforced with fine parallelized textile fibers laid crosswise to the apron.

IV, 2b. Wool; worsted

REWORKED WOOL. Anon. *Rayon Textile Monthly 26,* 245 (May 1945). Use of reworked wool in hand dyed yarns often introduces off-shade troubles. Aside from these, the principal color fault in such yarns is a skittery appearance due to lack of uniformity in coloring. Causes of skitteriness and some methods of prevention are discussed.

IV, 2d. Rayon

RAYON STAPLE. Harold Ashton. *Textile Bull. 68,* No. 7, 25-6 (June 1); *Textile Weekly 35,*

924, 926 (May 18); *Rayon Textile Monthly 26,* 222-3 (May 1945). There are numerous unsolved problems involved in successful spinning of rayon staple on present machinery. In particular, modified methods of drafting are needed to deal with the wide range in length and fineness now available in rayon staple.

SPINNING RAYON. S. W. Barker (to Lustrafil Ltd.). Brit. P. 563 296. Rayon thread coming from the spinneret is washed while being guided over skew rollers. Zoning guides are provided by interspersing a ringed or grooved guide roll to define the boundary between the acid zone and the wash water zone.

SPINNING MACHINE CONTROL. Hugh D. Haley (to Am. Viscose Corp.). Can. P. 427 634, May 2. A centrifugal bucket for processing viscose filaments is sprayed at intervals and is so arranged that drainage while spraying passes to one outlet whereas drainage while not spraying passes to another outlet.

IV, 2e. Winding

SIZE CONTROL FOR WINDERS. Anon. *Cotton 109,* No. 4, 132 (April 1945). News notes concerning a new attachment for size control on the No. 50 Universal winder. This size control is so sensitive that it will stop the machine within 1 yarn layer of the specified package thickness.

CHANGING CREEL COUNTS. Anon. *Textile Recorder 62,* No. 743, 58, 70 (Feb. 1945). Illustrated directions for changing from one yarn count to another on cone creels.

BOBBIN WINDING. H. E. Wenrich. *Rayon Textile Monthly 26,* 230-2 (May 1945). Illustrated description of correct practice in winding bobbins to prevent defects. Several mechanical devices for correct winding are described, and principles to be followed in operation of winding machines are discussed.

WINDER. Winthrop L. Perry & Edward J. Abbott (to Abbott Machine Co.). USP 2 377 367, June 5. A winding machine has a thread guide which is frictionally driven by a reciprocating traverse bar, and a device which detains the thread guide assembly at the start of winding against travelling its full traverse path in order to wind a batting or reserve bunch.

WINDER. Ed. Fletcher (to Owens-Corning Fiberglas Corp.). USP 2 377 771, June 5. A traversing device for high speed winding machines has coaxial oppositely rotating units for alternately moving the strand back and forth along the spool as it winds into a package.

WINDER. Moulton L. Hudson (to Am. Enka Corp.). USP 2 377 784, June 5. A winding machine has a collector along which a traverse member reciprocates while carrying a removable thread guide.

The thread guide and traverse device are so arranged that the thread guide is automatically locked to the traverse member only when the guide is in operative position.

WINDING YARN. Paul W. Markwood (to Am. Enka Corp.). USP 2 377 799, June 5. A device for unwinding yarn from the outside of hollow yarn packages includes an inner support for the hollow package and an anti-ballooning disc placed above the package so that when yarn is unwound at ballooning speed it strikes and rotates the disc.

COP WINDING. J. P. Mackie (to J. Mackie & Sons Ltd.). Brit. P. 563 549. In a cop winding machine having conical rolls bearing on the tapered ends tension is applied to the yarn just as it passes through the nose of the cop. This is done by bending the yarn sharply around a bar placed between the traversing device and the cop. End breakage is thus reduced.

CROSS WINDING. J. P. Mackie (to J. Mackie & Sons Ltd.). Brit. P. 563 613-4. Cross winding by a roll traverse method utilizes spirally grooved rolls having one groove for traversing in one direction or 2 grooves for traversing in opposite directions from an intermediate position. The yarn guide is stationary and a breastplate extends along the roll between the roll and the delivery device.

WINDING YARN. Charles Ribavaro (to Filatex Corp.). Can. P. 427 569, May 15. A machine for winding elastic yarn draws yarn from a feed roll faster than the peripheral roll speed and winds the yarn under tension which is kept constant by continuously accelerating the feed and the pull of yarn from the feed roll in proportion as the wound package increases in size.

IV, 3. Processing and finishing

KNOTLESS YARN. Anon. *Textile Weekly 35,* 928, 944 (May 19, 1945). Illustrated description of an electrically driven piecing machine for producing long lengths of folded yarns absolutely free from knots. The operation of the machine is described to show how piecing is effected when defects occur.

NOVELTY YARNS. Diplomist. *Textile Weekly 35,* 677-8, 680 (April 13, 1945). Novelty yarns produced by introducing knots and other irregularities into the yarn at intervals offer a medium for producing many attractive fabrics. Several effects are described and illustrated.

TREATING THREAD. Leib Windschauer. USP 2 375 971, May 15 (vested in the Alien Property Custodian). Thread is passed through a viscous mass of grease contained in a vessel having vertical slots in its end walls to receive the thread, and collecting chambers at each end to collect any grease exuding through the slot.

TREATING THREAD. Richard W. Stanley &

Henry J. McDermott (to Am. Viscose Corp.). USP 2 377 655, June 5. Thread or thread bundles are moved at an angle to the vertical and treated with a jet of liquid which is projected at the same angle while a thread guide maintains the thread axis in the same plane as that of the liquid jet.

CRIMPING. Am. Viscose Corp. Brit. P. 563 440. Apparatus for drying or crimping filaments moves a layer of filaments between an insulating belt and an upper belt while exposing the filaments to a high frequency electric current. Pairs of rolls, operated at successively lower speeds, serve to crimp the filaments.

IV, 4. Products (thread, yarn, cord, etc.)

NARROW FABRICS. A. Thompson. *Textile Mfr. 71,* 142-3, 147 (April 1945). Ribbon, cord, braid, webbing and elastic tape cover an enormous range of fabrics and structures. Ways of utilizing structure and weave to obtain special decorative or utility effects are described and illustrated. As an example a method is described for narrowing 2″ webbing to 1″ on the loom, using up only 1″ of length in the process.

FLOATING ROPE. Cecil Robins & Wilfred Kershaw (to Fine Cotton Spinners' & Doublers' Assoc'n, Ltd. & Bleachers' Assoc'n Ltd.). USP 2 376 813, May 22. Rope which floats on water is made of fibers coated with a water-repellent and joined in a structure which forms inner cavities but retains fibers in contact so that water does not enter the cavities, while the outer surface of the rope is faced with a water-repellent.

BRAIDED CORD. Carl J. Hackbarth (to Western Electric Co., Inc.). USP 2 377 003, May 29. A machine for braiding cord on electric wires has a device for feeding 3 wires to spaced wire guides, and a cylindrical takeup capstan. The wires are spaced and set in such a way that the first wire is covered faster than the other 2.

ELASTIC THREAD. James L. Getaz. USP 2 377 489-90, June 5. Elastic thread is incorporated in circular knit fabric by feeding the elastic to the needles during only a portion of a circular knit course and permitting 1 complete revolution of the needles before reengaging the elastic thread therewith; or only certain needles are selected in each course to receive the elastic thread.

ENDLESS BELT. Arthur S. Brown (1/3 each to Ludovic Shiatte & Gertrude E. Sedgley). USP 2 377 609, June 5. An endless transmission belt is formed by twisting together fiber strands and covering the body portion of the belt with a tightly wound fabric tape surrounded by a fabric tape wound in the opposite direction.

FILTER. Merrill G. Hastings & Harry J. Hayward (to Merrill G. and Emita E. Hastings & Robert L. Fielding). Can. P. 427 723, May 22. Filter tubes are made by winding thread on a revolving support to form layers of spaced crossed convolutions leaving diamond-shaped passages through the element, and mounting the thread at an angle to the tube circumference as winding proceeds.

CELLUCORD RUG BACKING YARN. Booklet of Millett Corp., New York City, 1945.

Cited in *Rayon Textile Monthly 26,* 207 (April 1945).

IV, 5a. Coated or impregnated products

HATS. Anon. *Modern Plastics 22,* No. 9, 20 (May 1945). Illustrated description of crocheted hats for women, made from a yarn coated with plastic. These hats are washable and are not affected by rain.

RAYON ON RUBBER. Joseph I. Taylor & Karl T. Schaefer (to North American Rayon Corp.). USP 2 375 261, May 8. Regenerated cellulose, thread or fabric is bonded to rubber by impregnating the rayon first with a cation-active compound, then applying rubber latex.

LAMINATES. Ralph V. Boyer (to Gen. Electric Co.). USP 2 376 653, May 22. A strong, rigid but light laminated structure is faced on each side with a laminated resin-impregnated fibrous sheet material, the space between these sheets being filled with a cellular resin containing a fibrous filler and alternating with solid synthetic resin spacers. The assembled structure, in 0.25″ thickness, has a flexing strength of about 4700 to 7600 psi.

TEXTILE PRODUCTS. Donald Finlayson & Frank C. Hale (to Celanese Corp. of Am.). USP 2 377 335, June 5. A stress-resisting structural article is made of textile yarn embedded in a plastic of low elasticity. The yarns include at least 1 set of closely spaced parallel yarns containing artificial filaments which have been stretched to increase their tenacity and reduce their elasticity.

PLASTIC SHEETS. D. Finlayson & H. Crawshaw. Brit. P. 563 589. Sheets of plastic are reinforced with yarn, both plastic and yarn having about the same low order of elasticity. The reinforcing yarn and an auxiliary yarn are incorporated in the plastic sheet after which the fabric is molded under pressure and the auxiliary yarn loses its strength.

PLEXON: PLASTIC-COATED YARN. Bull. of Freydberg Bros.-Strauss, Inc., New York City, 1945.

Reviewed in *Textile Bull. 68,* No. 5, 49 (May 1, 1945).

IV, 5b. Laminates

PULP LAMINATE. Alfred Crustin. Can. P. 427 281, May 8. Viscose, applied as a neutral solution and then precipitated, is used as the bonding agent in laminated pulp products.

V. YARN TO FABRIC

FIBER TO FABRIC. M. D. Potter, Gregg Publishing Corp., New York City, 1945; 314 pp.; price $2.00.

Reviewed in *Rayon Textile Monthly 26,* 258 (May 1945).

V, 1. Preparation

UPTWISTER. H. Lasch. Brit. P. 563 241. A tensioning device for an uptwisting throwing machine carries the yarn from the supply package through 2 movable guides, the relative positions of which are governed by the tension of the yarn against counterweights.

V, 2. Sizing

SLASHER DRIVE. J. W. Stribling. *Cotton 109,* No. 4, 105-7 (April 1945). Illustrated description of a multimotor slasher drive installation at the Dwight Mfg. Co. in Alabama City, Alabama. This all electric drive permits high slasher speed and has solved the problem of uniform density throughout the loom beam.

V, 3. Weaving

WARP TYING. Anon. *Silk & Rayon 19,* 424-5 (April); *Textile Mfr. 71,* 155-6 (April); *Textile Recorder 62,* No. 745, 58, 61 (April 1945). Illustrated description of the "Titan" automatic warp tying machine. In processing crepe yarns it is particularly important not to allow the yarn to slacken since the resulting snarls cause serious cloth defects. The Titan machine never allows these ends to become slack. The machine can attain a speed of 20 000 knots per hour but is most efficient at 12 000 to 15 000 knots per hour.

WEAVING RAYON CREPE. J. Kunzel. *Textile Mfr. 71,* 169-70, 193 (April 1945). Precautions for preventing snarls and kinks in weaving rayon crepe are described and illustrated. Special attention is given to selvedge loops and the weaving faults which produce them.

WARP TYING MACHINE. F. Lambach. Brit. P. 563 855. A warp tying machine is fitted with a storage device for temporarily unwinding a portion of warp from the beam to facilitate tying broken ends. The device includes a pair of movable grips, one of which has a drive for enabling it to grip the warp and draw it into the storage device when the grips are moved into active position.

V, 3a. Looms

LOOM SPEED. Anon. *Cotton 109,* No. 4, 108-9 (April 1945). Illustrated description of a spreader installation at the Chiquola Mfg. Co. which increased production by increasing loom speed. The spreaders are braces between the sides of the loom and include extra bearings for the crank shaft and cam shaft to minimize vibration.

AUTOMATIC LOOMS. Anon. *Textile Recorder 61,* No. 739, 46-8, 56; No. 741, 44-6 (Oct. & Dec. 1944); *62,* No. 743, 40-1, 57 (Feb. 1945). Illustrated description of the Hattersley Standard Model automatic bobbin changing loom, including the Hattersley shut off motion.

POSITIVE DOBBY. Benlow. *Textile Recorder 62,* No. 744, 40-1; No. 745, 44-5, 63 (March, April 1945). Illustrated description of the construction and operation of a positive dobby with a drive from the bottom shaft and with synchronized movement of the vibrator.

RAYON LOOMS. Diplomist. *Textile Weekly 35,* 790, 792, 794, 836, 838 (April 27 & May 4, 1945). Illustrated description of the White "full capacity" dobby loom for use with silk and rayon. Directions for operating the loom are given.

CARPET WEAVING. W. Felton, David Crabtree & Son, Ltd. *Textile Mfr. 71,* 157-62 (April 1945). The spool-gripper type of carpet loom is a new design for weaving Axminister carpets. It combines some of the strength and economy of the gripper loom with the range and capacity of the spool loom. Drawings and photographs are shown.

LOOM. Eric Lundgren (to Thos. A. Unsworth). USP 2 377 564, June 5. An interlacing needle loom for needling a batt of fiber has opposed sets of needles so arranged that as the batt moves forward the needles enter and leave the batt while moving in the same forward direction.

LOOM. Eneas G. Mascarenhas. USP 2 377 800, June 5. An electropneumatic loom has a non-oscillating lay with a normally fixed stationary reed and a beatup comb operating through the warp near the fell, with a device for transferring the weft pick from the lay to a point close to the path of the beatup comb.

V, 3b. Loom parts

TEXTILE ACCESSORIES. Anon. *Textile Mfr. 71,* 171 (April 1945). Suggested uses of plastics in textile machine parts include shuttles and bobbins of resin-impregnated wood to replace dogwood or persimmon; neoprene and Thiokol roll covers and aprons; and molded ring travellers.

LOOM TEMPLE. Anon. *Textile Recorder 62,* No. 745, 52, 57 (April 1945). A new type of loom temple is described and illustrated. Its operation is discussed with respect to 3 types of cloth namely all wool, worsted warp with wool weft, and all worsted.

LOOM DRIVE. W. L. Fluke, B. F. Goodrich Co. *Textile Age 9,* No. 5, 78, 80 (May); *Textile Bull. 68,* No. 4, 28, 48-9(April 15); *Rayon Textile Monthly 26,* 188 (April 1945). The multiple V-belt type of drive for looms has now been de-

veloped to a practical and efficient operating design. Data are presented on experimental tests made at the Martha Mills.

LOOM BOBBINS. H. E. Wenrich. *Rayon Textile Monthly 26,* 177-9 (April 1945). Empty bobbins, before being returned for refilling, must have clinging strands of yarn removed. Hand cleaning is tedious. Modern machine stripping of empty bobbins not only saves time but prolongs bobbin life and eliminates the weaving defects which result from using improperly cleaned bobbins.

WARP LETOFF. Albert Moessinger (to Sulzer Freres, S. A.). USP 2 375 316, May 8. A warp letoff device operating from the warp beam has a tension device which is connected to the coupling between the warp beam and the power source and is governed by a control device also driven by the power source.

BOBBIN. Wm. F. Stahl. USP 2 375 704, May 8. Bobbins are made by placing on each end of a tubular paper core a flange with a center aperture into which the core fits snugly. Free spaces are left between the flange and core so that the core can be driven outwardly into these spaces by swaging the ends.

THREAD CONTROL. Walter H. Wakefield (to Crompton & Knowles Loom Works). USP 2 375 712, May 8. In a weft replenishing loom in which waste threads are collected incident to weft replenishment a hollow thread collector is connected pneumatically to the interior of the vacuum support which holds the reserve bobbin magazine.

THREAD REMOVER. Albert Cederland (to Crompton & Knowles Loom Works). USP 2 376 229, May 15. In a weft replenishing loom when a thread is to be removed after being cut at the selvage, several picks after a transfer operation, a flywheel which rotates at each operation of the transfer device continues rotating until after the thread is cut at the selvage. The flywheel operates the device for removing the thread at the proper pick.

HEDDLE BAR. Charles E. A. Lausberg. USP 2 376 258, May 15. A heddle bar support has a plate attached to the heddle frame across the line of the heddle bar, which is received in a recess in one side of the plate. A second plate is pivoted on the first at the end farthest from the support and also has a recess to engage the heddle bar, the 2 recesses opening in opposite directions when the 2 plates are superposed.

BOBBIN CHUTE. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 376 738, May 22. A bobbin chute is attached to the lay of a loom and has a concave bobbin-engaging surface curving downward and forward.

SHUTTLE. Harold E. Goff & Walter F. Daboll (to Watson-Williams Mfg. Co.). USP 2 377 079, May 29. A loom shuttle has a self-threading eye with a lengthwise passage protected by an anti-ballooning plate placed in grooves along the sides of the shuttle behind the eye and next to the clip of a bobbin mounted in the shuttle.

RUG FILLERS. Romeo Paulus. USP 2 377 101, May 29. A frame for holding a cylindrical ball of yarn filler which is unwound from the inner turns outward rests on a base having sloping sides while the end walls attached to the base incline outward at a slight angle and are of a size adapted to support the yarn cylinder.

LOOM ATTACHMENT. Walter B. Gallant, Jr. (to Newmarket Mfg. Co.). USP 2 377 223, May. 29. In an automatic bobbin changing magazine loom having a stop motion operated by a center filling feeler fork, a locking lever and holding hook are provided for retaining the stop motion in inoperative position during part of the first pick after a transfer, the holding hook being released after that pick.

SHUTTLE PEG. C. Allsopp & G. Newsome. Brit. P. 563 217. A shuttle peg has a leaf spring mounting, so arranged that when the peg is raised to correct angle no further movement is possible so that the springs can not be broken. When the peg is lowered the upward pressure prevents any accidental lifting of the peg.

ELECTRIC BRAKE. F. Lambach. Brit. P. 563 879. An electric control brake for warping or beaming machines has a motor circuit with at least 1 switch which may actuate the braking system.

YARN GUIDE. Theodore E. Carlson (to Camille Dreyfus). Can. P. 427 461, May 8. Life of guide eyes through which yarns are passed is prolonged by mounting guide eyes on a support in sets spaced to form a bank of guide eyes in which each set can be turned at intervals so as to contact a new surface of the guide eye with yarn.

V, 3c. Control devices; stop motion; bobbin selectors

WARP STOP MOTION. I. Laird. *Textile Mfr. 71,* 144-6 (April 1945). Points to be observed in operating warp stop motion devices are discussed, with reference to shuttle timing, heald shaft position and the correct use of lease rods.

STOP MOTION. Brian Plunkett (to Celanese Corp. of Am.). USP 2 375 324, May 8. A warp stop motion device has a pair of cooperating rolls which catch a yarn if it breaks and cause it to operate the switch closing the stop motion circuit.

STOP MOTION. Albert E. Winslow (to Atwood Machine Co.). USP 2 375 605, May 8. A stop motion for a yarn handling machine has a drive drum next to which is a belt with pulleys on

each side of it. A swinging bracket, which carries pulleys on either side of the belt, is so arranged that when a yarn breaks the bracket shifts the belt from the drive drum and sets a brake to stop the drum.

WEFT DETECTOR. Oscar V. Payne (to Crompton & Knowles Loom Works). USP 2 377 102, May 29. An electric weft detector for looms has a contract which closes when the weft is exhausted and thereby initiates a change in the operation of the loom.

V, 4. Knitting

KNITTING MACHINE. Anon. *Cotton 109*, No. 4, 157-8, 160 (April 1945). Illustrated description of the standard 80-wrap shog machine and the standard L shog machine for knitting men's socks. Confusion which has arisen between the 2 machines is clarified.

WARP KNITTING. W. E. Boswell. *J. Textile Institute 36* P41-5 (April 1945). An illustrated review of warp knitting machines and the types of fabrics made by them. The types of machine include the bearded needle, Rachel and milanese machines.

COORDINATED KNITTING. Julian W. Hughes. *Southern Knitter 9*, No. 5, 33, 64-5 (May 1945). Coordination of weft and warp knitting in making full fashioned stockings is a machinery problem. Some of the principles involved are described and illustrated and a method of coordination is proposed. The details of effecting this coordination involve machine design.

KNITTING MACHINE. Isaac H. C. Green (to Hemphill Co.). USP 2 375 050, May 15. In a circular independent needle knitting machine in which needles and sinkers are sometimes rotated and at other times reciprocated, the yarn feed includes a mouthpiece, a yarn feeding lever for body yarns and an adjacent lever for pile yarns applied during rotary knitting. A third lever feeds pile yarn during reciprocating knitting.

YARN FEED. Henry H. Holmes & Albert H. Widdowson (to Wildt & Co., Ltd.). USP 2 375 473, May 8. The yarn guides of a knitting machine are fitted for trapping and cutting a yarn whenever it is withdrawn from knitting by an outgoing yarn guide, while a yarn placer and cutter operate at each yarn change to introduce the ingoing yarn to the needle.

KNITTING MACHINE. Henry H. Holmes & Albert H. Widdowson (to Wildt & Co., Ltd.). USP 2 375 475, May 8. A circular knitting machine with independent latch needles has axially opposed needle cylinders and a circular series of lateral latch-opening projections arranged to correspond with latch-opening edges on the operating ends of the needles.

KNITTING. Oscar Fregeolle (to Hemphill Co.). USP 2 376 044, May 15. A body yarn and a wrap yarn are knit together on a circular, independent needle knitting machine in a described sequence.

KNITTING MACHINE. Fritz Lambach. USP 2 376 364, May 22. An assembly of beams for a warp knitting machine has a beam brake with a rotatable shaft and a coupling which connects with a coupling for a beam assembling device.

YARN GUIDE. Frank G. Weisbecker (to Hosiery Patents, Inc.). USP 2 376 643, May 22. A yarn guide tube is held in releasable position on a support by resilient V-shaped holders.

KNITTING MACHINE. Ralph N. Toone & Thos. L. Allen (to B. Toone) (Nottingham, Ltd.). USP 2 377 729, June 5. In making fabrics on an independent needle knitting machine an additional thread is fed for a time, then severed so that the entire thread from severed point to needles is knitted into the fabric. A fresh additional thread is then treated in the same way.

KNITTING MACHINE ADJUSTMENT. T. Booth. Brit. P. 563 246. Knitting machines for berets or the like, when arranged to knit a single course of stitches at each stroke, may be adapted to knit a number of courses at each stroke. The conversion device utilizes a cam track with double reciprocating action for the needles and a double yarn guide carrying system.

KNITTING DEVICE. H. H. Holmes & A. P. Saunders (to Wildt & Co., Ltd.). Brit. P. 563 905. An automatic widening and narrowing mechanism for knitting machines has a main cam system for circular knitting only, with a knocking over cam which is inactive during reciprocatory knitting and an auxiliary knitting cam system engaging with auxiliary needle butts which are active only during reciprocatory knitting.

STOP MOTION. Wm. C. Lee (to Hemphill Co.). Can. P. 427 207, May 1. A stop motion for wrap yarn on a circular knitting machine is placed next to the warp thread feed and has a trigger situated so that it can be operated by a yarn-controlled device on the wrap thread feed.

FOOT COVERING. Leon S. Herbert (to Theotiste N. Herbert). Can. P. 427 614, May 22. A foot covering to be worn under a shoe is knit from a single ply fabric with all the courses extending lengthwise of the foot, and has an upper welt in which the single ply fabric is doubled on itself to form a 2 ply band with less stretch than the remainder of the article.

KNITTING MACHINE. Isaac H. C. Green & Eugene St. Pierre (to Hemphill Co.). Can. P. 427 670, May 22. A cam block on a circular knitting machine carries cams which draw stitches dur-

ing rotary and reciprocating knitting. The cam block is mounted on a pivoted support carrying 2 adjustment devices, one of which controls stitch height during rotary and the other during reciprocating knitting.

HOSIERY. Robert Kirkland Mills (to Hosiery Developments, Ltd.). Can. P. 427, 849, May 29. Run-resisting fashioned hose are made on a circular knitting machine by maintaining the optimum stitch size and stitch-locking loop throughout the knitting process, then cutting and seaming the resulting tubular fabric to produce a fashioned stocking leg.

V, 5. Pile fabrics, laces, embroideries, netting

TUBULAR NETTING. Hugo Mehler. USP 2 376 442, May 22. Tubular netting is made from meshes comprising links and joints formed by braiding at least 3 strands into links and weaving all strands with links extending in one direction with all strands having links extending in the opposite direction. This weaving is carried in a straight line through a series of the woven joints.

PILE FABRIC. Wm. H. King (to Behr-Manning Corp.). USP 2 376 922, May 29. Pile fibers are held on a transfer surface by a weak adhesive and brought into contact with a backing sheet having a stronger adhesive which retains the pile fibers from the transfer surface.

PELT EFFECTS. Wm. I. Taylor & James F. Levers. USP 2 376 983, May 29. Pile fabrics having the appearance of animal pelts are made by forming the pile from flat filaments of cellulose ester rayons and crinkling the pile filaments by contact with boiling water while the fabric is not under tension.

HAIR NET. A. E. Hunter (to Byard Mfg. Co., Ltd.). Brit. P. 563 902. Shaped lengths of fabric suitable for hair nets or slumber caps can be made on twist lace machines by operating with faster takeup at the middle than at the sides. The usual porcupine roll is replaced by a cam roll which is displaced more from the axis at the middle than at the sides.

V, 6. Mechanical processing

RAISING MACHINE. Anon. *Textile Recorder 62,* No. 745, 51, 57 (April 1945). Illustrated description of a modified "Q-Vee" raising machine, designed especially for the Yorkshire woollen mills. The belting arrangement is such that each of the 18 rolls is positively driven.

CLOTH HANDLING. H. Marsden, *Textile Mfr. 71,* 153-4, 156 (April 1945). Machines for rolling, examining and measuring cloth, and doubling or winding machines are described and illustrated.

PARACHUTE CLOTH. L. M. Richardson. *Textile Bull. 68,* No. 6, 30 (May 15, 1945). A brief description of methods employed in processing parachute cloth for the colored parachutes used in delivering supplies to troops.

CURLED SELVEDGES. D. R. H. Williams. *Textile Mfr. 71,* 168, 173 (April 1945). A method is described which is reported to be effective in preventing curling of selvedges during milling of fabrics.

SEAM PROTECTOR. Wilfred N. Hadley (to Parks & Woolson Machine Co.). USP 2 375 732, May 8. A photoelectric device is employed on a cloth shearing machine to stop the shearing as a seam passes the machine.

FULLING MILL. Frank B. Morrill (to James Hunter Machine Co.). USP 2 375 736, May 8. The tongue of a crimp box in a fulling mill is weighted with a movable weight connected to a remote control device for shifting the weight nearer to or further from the pivot of the tongue.

SHEARING MACHINE. Winfred N. Hadley (to Parks & Woolson Machine Co.). USP 2 377 146, May 29. A cloth shearing machine has a lubricating device which moves along the fixed cutter to lubricate the cutter blades with a spray of oil.

CONTROLLED SHRINKAGE. J. J. Hadfield & D. Bamford. Brit. P. 563 638. Apparatus for controlling fabric shrinkage has an endless flexible rubber band over which the fabric is passed under tension and then to a highly burnished hot drying cylinder which permanently sets the applied shrinkage.

V, 7. Products; design; construction

REVERSIBLE LINING. Anon. *Am. Wool & Cotton Reptr. 59,* No. 18, 11-12, 42-3 (May 3, 1945). A reversible satin lining formerly made of silk is now made of viscose and acetate yarns in a stripe weave which permits many decorative effects. A photomicrograph of the weave is shown.

NEW IDEAS. Anon. *Rayon Textile Monthly 26,* 187-9, 205, 251-2 357 (April, May 1945). News notes concerning a synthetic rubber latex developed for the government by U. S. Rubber Co.; a complete abrasion testing set accompanying the improved Taber abrasion meter; an expander, mounted on ball bearings, for rolling fabric or tire cord without wrinkles on mangles, calenders or washers; an air filter and dust collector developed by Ideal Commutator Dresser Co.; Paraplex RG-8, a new long oil type alkyd resin for use with nitrocellulose or other plastics on coated fabrics; Flexol 4GO, a plasticizer of the ester type for cellulose derivatives and for synthetic resins or rubber; the Turbo Machine Co. preboarding machine for nylon hosiery; sapphire guides for thread or yarn on textile machinery; an improved electric warp stop mo-

tion; improved box, trucks and stacking or shipping boxes which do not snag fabrics; a vacuum sump for cleaning mud or sludge from sump tanks in wool scouring and other operations; a synthetic resin coated fabric for loose leaf binders; dioctyl sebacate as a low temperature plasticizer for polyvinyl chloride resins.

POSTWAR TEXTILES. Victory issue, *Am. Wool & Cotton Reptr. 59*, No. 21, 35-9, 41, 45, 47, 49, 51, 53, 56-7, 60-1, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93-101 (May 24, 1945). Commercial and technical prospects for textiles in the immediate postwar period and in the development period to follow are discussed in the light of the victory in Europe. The topics include preparation for peace as emphasized in Nat'l Cotton Week; reconversion to follow victory over Japan; conservation in cotton fabrics as aided by fashion and design; a Nat'l Cotton Week broadcast by E. J. Flynn; cotton goods markets as related to continuing military requirements; present and probable postwar demands for rayon and nylon and market possibilities related thereto; probable postwar developments in rayon, staple fiber, new synthetic fibers and improved textile machinery; the military and civilian situation in woolen and worsted fabrics; reconversion plans of some knit goods mills; textile tariffs as related to the production situation; and the postwar outlook for textile exports from the United States.

FABRIC DESIGN. Leonard Bellwood. *Textile Weekly 35*, 224, 226, 230, 600, 602, 646, 648, 670, 672, 674, 736 (Feb. 2, Mar. 30 & Apr. 6, 13, 20, 1945). Designs for suitings are described and illustrated in group reverse stripes, narrow weave stripes and stripes in 2 weaves.

KNIT FABRICS. Hazel M. Fletcher, Bur. of Human Nutrition & Home Economics, USDA. *Rayon Textile Monthly 26*, 233-6 (May 1945). Physical properties of knit fabrics made from natural and mercerized, carded and combed cotton yarn are tabulated. The numerical data include yarn number and twist, gage, courses and weight of cotton knit fabrics; breaking and bursting strength, elongation, resilience, water absorption, abrasion resistance, thermal insulating capacity and permeability to air and water vapor. In general combed yarns were stronger than carded yarns. Mercerized yarns tend to give higher breaking strength but lower bursting strength. Bibliography (20 references).

PAPER FABRIC. F. J. Oakley. *Fibers, Fabrics & Cordage 12*, 156-7 (April 1945). In Japan there are numerous uses for paper which in the western countries utilize textile fibers instead. Dress goods, handkerchiefs, umbrella covers, tarpaulins and sacking are all made of paper type fibers in the rural areas, although textiles are more used in the cities.

SEAM. Irving F. Webb (to Singer Mfg. Co.). USP 2 372 632, March 27. A seam between 2 sheets of material is formed with inturned edges with the aid of a binding tape which is cemented to the material to secure contacting edges together.

BAG CLOSURE. Charles V. Brady (to Bemis Bros. Bag Co.). USP 2 373 010, April 3. A bag closure has adjacent multiply bag end portions, a layer of low-melting sealing substance covering all faces and interfaces of these plies and a V-shaped covering tape with dry outward faces enclosing the bag ends. Stitching passes through the outer tape and the bag ends, the holes in all plies being sealed by the sealing substance.

HOSIERY. Edwin L. Schubert. USP 2 375 253, May 8. Rayon stockings are made by knitting a thigh portion, narrowing the stocking by about 15% of the initial perimeter toward the knee, widening toward the calf to about 95% of the initial perimeter, narrowing toward the ankle to about 60% of the initial perimeter and finally knitting a foot portion.

KNIT FABRIC. Henry H. Holmes & Albert H. Widdowson (to Wildt & Co., Ltd.). USP 2 375 474, May 8. A knit fabric is made in 2 sections, one of horizontal stripe effect with a main yarn only but with interspersed partial courses of a single stripe yarn while the other section consists of the main yarn and a splicing yarn.

TERRY REINFORCEMENT. Albert E. Page (to Scott & Williams, Inc.). USP 2 375 683, May 8. A stocking is made with high splice and heel area of 2 yarns, the sides of this area having plain loops in both yarns while the middle has terry loops in 1 yarn.

KNIT STOCKING. Frank R. Page (to Scott & Williams, Inc.). USP 2 375 684, May 8. In a stocking with terry loops in heel and toe the terry loops start at a uniform distance from the suture and continue to the next suture in each course throughout the heel or toe.

RESISTANCE UNITS. Werner J. Larson. USP 2 375 997, May 15. A resistance unit is made by weaving warp strands of insulating material and weft strands of resistance wire alternating with sections of lead wire woven into the body of the fabric.

KNITTING. James L. Getaz (to Scott & Williams Inc.). USP 2 376 246, May 15. A knit fabric has broad ribs of multiple wale width of multiple wale ribs and at least 1 wrap yarn included in stitches in the same course in a broad rib.

BOTTLE CAP. Iliya F. Bulatkin (to Crown Cork & Seal Co., Inc.). USP 2 376 899, May 29. A pulp board sealing disc for bottle caps is faced on one or both sides with a film of wax containing an embedded layer of cheesecloth.

SHOE BINDING. Maxwell E. Duckoff. USP

2 377 216, May 29. Extensible binding tape for shoe uppers is made from bias-cut lengths of fabric having a rib weave, the tape being folded inward at the edges and sewed in such a way that when the tape is in place in a shoe upper it presents the appearance of a French cord binding.

RESILIENT FABRIC. W. Garner (to Lister & Co., Ltd.). Brit. P. 564 026. Shock absorbing pads are made from 3 or more layers of fabric with at least 2 layers of flexible fiber between the successive fabric layers. One face is woven into the adjacent fabric while the other is secured by adhesive.

TROUSER CUFF. Daniel C. Lippmann (to Camille Dreyfus). Can. P. 426 929, April 17. A trouser cuff or similar edge construction for fabric is made by folding a strip of thermoplastic lengthwise, inserting a strip of fabric in the fold and applying heat and pressure to bond the outer layers to the fabric.

COMPOSITE FABRIC. Roy C. Amidon (to Vanity Fair Mills, Inc.). Can. P. 427 903, May 29. In combining a knit fabric with a woven fabric several chains are knit from a single thread in such a way that all the chain lengths lie on the same side of the woven fabric while loops are formed on the other side of the woven fabric and interlaced with each other.

V, 8b. Coated or impregnated products

FABRILITE. Anon. *DuPont Mag. 39,* No. 1, 21-2 (March-April 1945). Lightweight rainproof fabrics for military and civilian use, known as Fabrilite, were developed to replace rubberized fabrics but are so superior in several respects that they will doubtless hold their place after the war. Butacite, DuPont safety glass interlayer plastic, is used in making Fabrilite.

COATED TENTING. Anon. *Textile Age 9,* No. 5, 68, 72-3 (May); *Textile Bull. 68,* No. 4, 24, 26 (April 15); *Rayon Textile Monthly 26,* 229 (May 1945). Illustrated description of the manufacture of army tent cloth, coated with synthetic resin. The coating composition is prepared by grinding pigments, resin binders and a plasticizer in a vehicle which ultimately serves as the flameproofing compound when applied to the fabric. Modified alkyd resins, employed as binder, remain flexible at subzero temperatures.

ENGINEERING MATERIALS. Archibald Black, Simmonds Aerocessories, Inc. *Mech. Eng. 57,* 334-43 (May 1945). Among the newer developments in engineering materials are glass fabrics for use as electric insulation and in a variety of applications where resistance to heat, dampness or decay is necessary. Waterproof adhesives for wood, paper and fabrics have made possible the introduction of many new and improved engineering materials in aircraft and boat construction and in the manufacture of many articles for military and civilian use. Resins for impregnating paper and textiles and for making laminates have also greatly extended the range of available engineering materials. Fluorescent dyes and pigments have a number of engineering applications, such as theater carpets, ship markings, exit signs, etc. Bibliography (144 references).

COATING FABRIC. Joseph Lloyd (to J. Mandleberg & Co., Ltd.). USP 2 377 637, June 5. A fabric coating machine has a spreading gage with 2 edges and an adjustable plate forming a trough with the gage but leaving a gap between. The fabric passes over a roll and coating compound is fed to it through the trough. The gage depresses the passing fabric and spreads the coating compound evenly over it.

CONVEYOR BELT. Samuel R. Reimel (to B. F. Goodrich Co.). USP 2 377 650, June 5. A conveyor belt has a breaker structure comprising layers of diagonally arranged cords, the cords of one layer crossing the cords of the next, while one layer of cords is placed directly crosswise of the belt.

COATED SHEET. S. C. Frawde (to Imperial Chemical Industries Ltd.). Brit. P. 563 723. Flexible sheets are obtained by coating fabric or paper with a plasticized nitrocellulose composition containing a heat-treated drying or semi-drying oil and an anti-oxidant.

HOT MELT COATING. Toivo A. Kauppi & Earl L. Krospscott (Dow Chemical Co.). Can. P. 427 373, May 8. Ethylcellulose, hydrogenated castor oil and a mineral wax are employed in a hot melt coating composition which forms nonblocking coatings.

AIRPLANE FABRIC. Robert L. Lester (to Can. Industries Ltd.). Can. P. 427 815-6, May 29. A highly supple and flexible predoped airplane fabric is made from a textile base having a potential shrinkage of at least 5% of its usual width by applying a plasticized nitrocellulose dope from an aqueous emulsion, allowing the fabric to shrink during evaporation of volatile components, and stretching the fabric back to its initial width before applying the final coating.

AIRPLANE FABRIC. Alfred Dreyling and Charles W. Johnson (to Can. Industries Ltd.). Can. P. 427 818, May 29. A highly supple and pliable predoped airplane fabric, giving a tautness deflection below 0.11" when the final dope is applied, is made of a strong light weight fabric having a discontinuous nitrocellulose coating applied from an aqueous emulsion, whereas final coats are applied from a nitrocellulose solution.

TERSON: RESIN-COATED FABRIC. Bulletin of Athol Mfg. Co., Athol, Mass., 1945; 14 pp.

Reviewed in *Rayon Textile Monthly 26,* 259 (May 1945).

V, 8c. Laminates

LAMINATE. Arthur M. Howald & Leonard S. Meyer (to Libbey-Owens-Ford Glass Co.). USP

2 375 365, May 8. A fabric laminate with high compressive strength is made by impregnating a cellulosic fabric with a urea-formaldehyde resin reaction product in an aqueous or alcoholic solvent containing an acid hardening agent, and bonding together several layers of the impregnated fabric into a sheet containing up to 60% of the hardened resin.

GARMENTS. Arthur B. Snowdon (to Camille Dreyfus). Can. P. 427 909, May 29. Garments or parts thereof are formed from a textile material containing acetate filaments by lightly laminating 2 or more fabrics on a flat surface, stretching the product into a desired shape, wetting the shaped article and molding under conditions which shrink the laminated fabric to the final size and shape while completing the laminating operation.

VI. FINISHING

NEW DEVELOPMENTS. Anon. *Chem & Eng. News 23,* 838-44 (May 10, 1945). News notes concerning a tent cloth coating composition which permits continuous production of waterproof, fireproof, mildewproof duck for army tents; dibutyl and dioctyl sebacate as low temperature plasticizers for polyvinyl chloride on vinyl-coated fabrics; a heat-sealing adhesive for use on wood, fabrics, leather, paper or cardboard; "Synvar" resins for application to textiles, paper and wood and for making laminates; Pliobond as a high strength adhesive for wood, plastics, rubber, fabrics or metals over a wide temperature range; and an arc lamp developed at the Nat'l Bur. of Standards for testing color fastness of textiles, paper and the like.

WOOL PIECE GOODS. Symposium, Huddersfield Section, Soc. of Dyers & Colourists, September 12, 1944. *J. Soc. Dyers & Colourists 61,* 90-4 (April 1945). Papers by J. C. Schofield on scouring and milling wool piece goods; S. L. Peel on dyeing all wool or wool-cotton blends; and G. K. Seddon on tentering, cropping and other operations in finishing woolen goods.

TENSION DEVICE. Dona L. Ballou (to Aspinook Corp.). USP 2 375 459, May 8. The beam of a textile processing jig carries pulleys at each end with split brake bands mounted in the grooves of each pulley in such a way that the contraction of the brake bands can be adjusted according to the desired tension on the fabric.

PRESSURE VESSEL HANDBOOK. Wm. Fogle, 1202 South Norton Ave., Los Angeles 6, Calif. 1945; price $5.00.

Reviewed in *Chem. & Eng. News 23,* 764 (April 25, 1945).

PROCESSING OF "RAYOLANDA". Courtaulds, Ltd. Coventry, England, 1945; 46 pp.; gratis.

Reviewed in *J. Soc. Dyers & Colourists 61,* 105 (April 1945).

VI, 1. Preparation

TENTERING MACHINE. Frederick G. Dodge & Walter K. McFarland (to Camille Dreyfus). Can. P. 427 460, May 8. Liquid is extracted from wet fabrics in a vacuum extractor. The vacuum tube has a slot longer than the width of the fabric; the excess is closed by a self-coiling tape which automatically coils or uncoils according to the width of the fabric passing over the tube.

VI, 1a. Boiling and scouring

SCOURING WOOL. Arthur N. Patterson, S. Stroock & Co., Inc. *Rayon Textile Monthly 26,* 191 (April 1945). Scouring of wool piece goods should precede carbonizing if a variety of colors are to be used in the final dyeing. The reason is that if scouring has not been thorough, carbonization is likely to be faulty and to lead to defects in dyeing. For example, if residues of oil, grease or soap are left the dyeings are likely to be cloudy. Streaks or spots in dyed goods are sometimes due to faulty carbonization which may or may not be due in turn to faulty scouring.

WOOL SCOURING. Donald Wilson. *Textile Recorder 62,* No. 745, 41-2, 65 (April 1945). The emulsion system of wool scouring is the most popular but the desuintage system, which is a modified emulsion treatment, has certain advantages in economy and efficiency. Careful control is essential since improper scouring may damage the spinning quality of the fiber.

VI, 1d. Drying and conditioning

CLOTH DRIERS. N. H. Chamberlain, Leeds Univ. *Textile Mfr. 71,* 163-6, 173 (April 1945). Applications of electronic control instruments to driers for fabrics show promise of increasing output while at the same time lowering production costs. Electronic detector and control units are described and illustrated.

DRYING TEXTILES. Henry Miedendorp, Jr. *Rayon Textile Monthly 26,* 239-40 (May 1945). Infrared drying units, either of the gas-fired or electric lamp type, have numerous potential applications in drying textiles but should be installed only under the direction of a competent engineer.

PYROLIZER. D. J. O'Connor, Jr., Formica Insulation Co. *Modern Plastics 22,* No. 9, 38-9 (May 1945). The pyrolizer is a heat treating device utilizing 2 banks of infrared lamps. It has successfully solved the problem of heat-treating lubricated glass fabric for use in laminates in panel boards for navy ships. The strength of the resin-to-fiber bond is doubled by the heat treatment.

DRYING FIBER BOARD. Carl G. Muench & George H. Burt (to Celotex Corp.). USP 2 376 612, May 22. In apparatus for drying thick mats of fiber such as insulation board with superheated steam the overall thermal efficiency of the system is

increased by employing an economizer through which a portion of the boiler flue gas is circulated.

DRYING RAYON. Radio Corp. of Am. Brit. P. 563 590. Rayon in cake form is uniformly dried by subjecting the cake to a partial vacuum and then to a high frequency electric field to cause uniform simultaneous heating as a result of dielectric losses.

VI, 3. Milling and fulling

FINISHING WOOLENS. Anon. *Am. Wool & Cotton Reptr. 59,* No. 22, 11-13 (May 31, 1945). Practical hints are offered for correct finishing of a 32-oz. kersey and a 19-oz. suede. Details of fulling and napping the pieces are cited. Shrinkage of suede differs according to weight and style and needs particular attention.

VI, 6. Sizing and finishing

ACID FINISHES. Anon. *Textile Recorder 62,* No. 744, 45-6; No. 745, 46, 65 (March, April 1945). A review of British and US patents on acid treatments of cellulose, chiefly with H_2SO_4, for parchmentising and transparentizing effects. Mercerization after acid treatment and acid treatments after mercerization are among the processes which have been covered by patents. Numerous decorative effects and successful imitations of linen and wool have been produced by acid treatment.

TEXTILE FINISHES. Ephraim Freedman. *Rayon Textile Monthly 26,* 244 (May 1945). Shrinkproofing of wool is important not only for dimensional stability but also for retention of resilience, which is a large factor in the best insulating value of wool.

FINISHES FOR MARQUISETTE. Joseph E. Goodavage, Phila. Depot QMC. *Textile Age 9,* No. 5, 62, 64-6 (May 1945). The use of Ceglin and some of its derivatives as a finish for marquisette netting meets many of the requirements for this product. Mildewproofing agents are preferably applied before the cellulosic finish. Prevention of slippage of warp threads is an important function of a satisfactory finish. Tests for water resistance and mildew resistance are described.

DURABLE FINISHES. Raymond A. Pingree, Warwick Chemical Co. *Rayon Textile Monthly 26,* 241-3 (May 1945). Recent developments in durable water-repellent and thermosetting resin finishes for fabrics are reviewed. Considerable research has been carried out on the application of durable water-repellent finishes at the same time with urea-formaldehyde resins to cotton and rayon fabrics. Some success has been achieved along this line by using modified ureaformaldehyde resins.

RESINS ON COTTON. D. H. Powers, Monsanto Chemical Co. *Am. Dyestuff Reptr. 34,* P191-3 (May 7, 1945). Some of the major improvements in cotton fabrics to be expected from resin treatments are in strength, washability, luster and capacity to take improved finishes. Through these improvements better properties can presumably be imparted to coated fabrics, garment fabrics, tenting and many industrial textiles.

SIZING RAYON. H. B. Sweatt, Animal Glue Information Service. *Textile Bull. 68,* No. 6, 24, 66-7 (May 15, 1945). Since acetate and viscose yarns can not stand the boil-off treatment used for desizing cotton and other natural fibers, a more easily removable size was necessary. Animal glue is being successfully used in a variety of rayon sizing operations. It is also useful in clarifying chemicals used in aqueous baths, in dyeing and bleaching operations and as a protective colloid in emulsions used for waterproofing textiles.

FINISHING WOOL. C. S. Whewell, Leeds University, *Textile Recorder 61,* No. 740, 52-4; No. 741, 51, 53, 55 (Nov. & Dec. 1944); *62,* No. 743, 49, 51, 66 (Feb. 1945). An illustrated review of modern equipment and methods for finishing wool and worsted fabrics, and a forecast of future trends in the light of present practice.

TEXTILE FINISH. John M. Hood (to Am. Cyanamid Co.). USP 2 376 595, May 22. A textile finishing composition is composed of an acid-curing aminoplast resin in an acidic aqueous emulsion containing gelatin the isoelectric point of which is at approximately pH 8.

TREATING NYLON. G. Loasby & D. L. C. Jackson (to Brit. Nylon Spinners Ltd.). Brit. P. 563 725. Accumulation of electrostatic charges on nylon or acetate rayon may be prevented by treatment with a lubricating composition containing 2-10% of a reaction product of ethylene oxide with a fatty alcohol.

TENTERING. Brit. Celanese, Ltd. Brit. P. 563 860. Two fabrics, one of which contains a thermoplastic component, may be joined edge to edge for tentering, dyeing or other operations by joining the edges and applying heat along the area of contact.

NYLON SIZE. J. C. E. Bessieres & H. Best-Gordon. Brit. P. 564 027. Nylon yarn is sized with a casein dispersion containing an emulsified oil and an amide such as urea. The oil may be peanut oil.

TREATING TEXTILES. Joseph E. Smith (to Can. Industries Ltd.). Can. P. 427 805, May 29. In applying a textile finish to a fabric from a positively charged aqueous dispersion, excessively rapid and uneven deposition of the finish is prevented by controlling the rate of exhaustion from the bath. This is done by adding 0.02-0.5% of a cationic surface-active agent such as a condensation product of diethanolamine and stearic acid.

PREPARATION AND SIZING OF SPUN RAYON AND MIXTURES. Bulletin No. SR, Paisley Products, Inc., New York City, 1945.

Reviewed in *Rayon Textile Monthly 26,* 226, 259 (May 1945).

TWENTY YEARS OF PLASTIC SURFACING. Bulletin of Roxalin Flexible Finishes, Inc. Elizabeth, N. J., 1945; 45 pp.

Reviewed in *Rayon Textile Monthly 26,* 205 (April 1945).

VII. COLOR

VII, 1. Bleaching

CHLORINE COMPOUNDS. Albert G. Chenicek. *Interchemical Rev. 4,* No. 1, 13-19 (Spring 1945). A review of the composition and uses of active Cl compounds, mainly as bleaching and oxidizing agents. Bibliography (26 references).

VII, 2. Dyeing

DYEING PILE FABRICS. Anon. *Dyer & Textile Printer 93,* 268-9, 309-10, 349, 351-2 389-90 (March 30; April 13, 27; May 11, 1945). In achieving levelness on pile fabrics such as teddy bear goods with cotton backing, plushette and low sealskin, care in sorting the shade is essential and the bath must be boiled long enough to level the salting color. Inadequate rinsing is a source of danger to levelness, and extra long piece goods such as plushette must be handled with extreme care. In the case of llama pile fabrics faulty steaming often leads to uneven dyeing. Some attention is given to shade correction without damage to fibers, and to silk, rayon and jute pile fabrics; also to polarian and pebble fabrics, and cotton plush.

BLACKS FOR WOOL. Anon. *Dyer & Textile Printer 93,* 149-51 (Feb. 16, 1945). In dyeing wool with acid and mordant blacks dye selection is the main problem. Blacks for wool are classified under the main heads of acid, chrome and combination blacks. Principles to be followed in selection and application of these dyes are discussed.

DYEING JUTE. Anon. *Dyer & Textile Printer 93,* 345-6, 387-9 (April 27 & May 11, 1945). In dyeing jute carpet yarns it is necessary to use vivid basic and acid dyes to obtain bright shades since bleaching of jute is very likely to tender the fiber. When basic dyes are used an acid assistant is required in order to obtain a level dyeing with good shade penetration. Cutch gives an extremely durable reddish brown shade on jute carpet yarns but causes considerable harshness and thereby introduces difficulties in winding, beaming and warping.

DYEING. George Broun. *Textile Bull. 67,* No. 12, 33-4; *68,* No. 2, 31-2; No. 4, 32, 40; No. 6, 34, 36; No. 8, 36, 38 (Feb. 15, Mar. 15, Apr. 15, May 15, & June 15, 1945). Directions are given for the application of acetate dyes to a variety of acetate rayon yarns and fabrics alone and in blends with other rayons or other types of fibers. Some attention is also given to the application of acetate dyes to nylon.

DYEING ARTIFICIAL FIBERS. Paul J. Choquette, General Dyestuff Corp. *Am. Dyestuff Reptr. 34,* P211-4 (May 21, 1945). Recent advances are reviewed in the application of vat dyes or their leuco esters, naphthol dyes and a variety of acid dyes to spun rayons, high tenacity rayons, Vinyon, Aralac, nylon and blends of these with wool or other fibers. Coloring of glass fiber by resin bonding of pigments on the fiber is also discussed.

DYEING NYLON. R. H. Peters, Imperial Chemical Industries, Ltd. *J. Soc. Dyers & Colourists 61,* 95-100 (April 1945). Experimental dyeing of nylon with acid dyes reveals an absorption curve which may be divided into 3 general parts apparently corresponding first, to reaction of dyes with amino groups in nylon exactly as occurs in dyeing wool, second a region in which increasing acidity no longer increases dye absorption, and finally a section in which increasing dye absorption is apparently due to accumulation of positive charges by the amide groups.

DYES FOR BERETS. R. H. Sennett. *Textile Recorder 62,* No. 745, 47-8, 50 (April 1945). Some difficulties encountered in dyeing military berets are discussed in relation to their effect on fastness standards in postwar practice. Successful formulas are presented for several shades used in military uniforms.

DYEHOUSE PRACTICE. J. Wakelin. *Can. Textile J. 62,* No. 8, 36, 38; No. 10, 40, 46 (April 20, May 18, 1945). Fundamental research on color fastness, water solubility and the chemical reactions of azo dyes, vat dyes and other types of organic dyes have helped much in problems of application to textiles.

CONTROL IN DYEING. Frank S. Ward, Taylor Instrument Companies. *Can. Textile J. 62,* No. 10, 34, 36, 50 (May 18, 1945). The basic principles of instrumentation for time and temperature control in dyeing textile fabric are discussed. Proper instrumentation effects savings in production costs and provides uniformly high quality of products. Applications to dyeing of cotton, rayon and wool are discussed.

DYEING HOSIERY. Joseph L. Wauters. *Southern Knitter 9,* No. 5, 28, 59 (May 1945). Bemberg rayon by its fineness of filaments gives more sheerness to stockings than do other rayons. The fineness also introduces problems in dyeing, partly because of relatively faster absorption and partly because of greater sensitivity to mechanical damage in hosiery dyeing machines. Directions are given for successful dyeing of bemberg rayon hose.

TINT FINISH. Victor L. Denny, Jr. (to E. I. duPont de Nemours & Co.). USP 2 375 839, May 15. In fugitive tinting and finishing of cellulose derivative rayons the fugitive coloring compo-

sition is freed from inorganic salt before adding it to the aqueous finish.

WOOL DYEING: EFFECTS OF VARIATIONS IN WOOL. R. E. Sumner and others. Technical Bull. 762, Calco Chemical Division. Am. Cyanamid Co. Bound Brook, New Jersey, 1945.

Reviewed in *Am. Dyestuff Reptr. 34*, 204 (May 7); *Textile Age 9*, No. 5, 122 (May 1945).

VII, 2c. Vat

VAT DYEING. Anon. *DuPont Mag. 39*, No. 1, 17-8 (March-April 1945). The pad-steam process of vat dyeing, designed for military fabrics, is applicable also to many other fabrics and needs less than a minute of steam exposure. The multilap process is for delicate fabrics and provides an efficient mechanical layout for continuous, controlled application of vat dyes by improved chemical methods.

CONTINUOUS DYEING. P. L. Meunier, E. I. duPont de Nemours & Co. *Am. Dyestuff Reptr. 34*, P206-10 (May 21, 1945). The basic pad-steam process for continuous vat dyeing shortens the time for dye reduction and fixation to a matter of seconds, with no sacrifice in quality of results. Depending on specific mill conditions one of the modified pad-steam processes involving the use of liquid boosters may be preferable.

DYE BATH. R. T. Freeman & G. S. Helliwell (to Mellor Bromley & Co., Ltd.). Brit. P. 563 634. Vats for hank dyeing and for other liquid treatments of textiles have a rounded bottom with a propeller type stirrer at the bottom. Matting is minimized since most of the hanks can thus hang to their full lengths.

VII, 2d. Printing

PRINTING NYLON. Anon. *Can. Textile J. 62*, No. 8, 49 (April 20, 1945). News notes on a new method of dyeing and printing nylon by application of resin bonded pigments from water-in-oil emulsions.

NEW DYE. Anon. *Silk & Rayon 19*, 450 (April 1945). News note concerning Durazol Brilliant Red BS, a new substantive dye useful for printing on cotton, viscose, wool and unweighted natural silk. The dye may also be used for white discharges on cotton and rayon in light shades.

SCREEN PRINTING. Anon. *Silk & Rayon 19*, 379, 411 (April 1945). Remarkable progress has been made in screen printing on textiles and a recent exhibit in London displayed prints, spun in 6 colors, which were outstanding in liveliness of color and were almost stereoscopic in the appearance of the pattern.

PRINTED SHIRTINGS. Anon. *Textile Mfr. 71*, 151-2 (April 1945). Specialized attention to

correct principles of design, coupled with skillful printing, can produce many useful and ornamental effects in fabrics for men's shirts. Several photographs of suitable designs are shown.

HAND PRINTING. E. S. Beton, Brocklehurst-Whiston Amalgamated, Ltd. *Silk & Rayon 19*, 394, 398, 402 (April 1945). Modern developments have raised hand block printing of textiles to an art backed by a high degree of technical skill. Block printing has hitherto had no rival for shading, purity and transparent quality of color, breadth of effect and decorative value. Modern screen printing show signs of becoming a rival of hand block printing in fullness and fastness of color. The photographic method of preparing printing screens is particularly effective.

SPRAY PRINTING. H. J. Popper. *Textile Mfr. 71*, 167 (April 1945). Modern spray or central printing has excellent possibilities for application to tablecloths, bedspreads, terry weave fabrics and the like. The spray method is particularly advantageous for loop or pile fabrics such as terry cloth, velvet and artificial fur.

PRINTING PASTE. Norman S. Cassel (to Interchemical Corp.). USP 2 376 319, May 15. In an emulsion printing paste for use on textiles the dispersed stage is an aqueous dye solution and the continuous stage is a water-immiscible solution of a film forming substance such as rubber in an organic solvent.

PRINTING TABLE BLANKET. W. Geiringer. Brit. P. 563 236. A device for tensioning the endless delivery blanket on a printing table has a transfer roll in contact with the underside of the blanket. The roll can be raised or lowered to adjust tension.

VII, 4. Pigment coloring

PIGMENT DYEING. Symposium, Manchester Section, Soc. of Dyers & Colourists, November 17, 1944. *J. of Soc. Dyers & Colourists 61*, 85-9 (April 1945), discussion 89-90. Papers by A. W. H. Barton, Imperial Chem. Industries, Ltd. on pigments employed in coloring textile fabrics; C. Hobday, Geigy Colour Co., Ltd. on fixation of pigments on textiles from aqueous baths with synthetic resins as fixatives; and R. J. Hannay on problems encountered in the application of colored pigments to textile fabrics.

TEXTILE PIGMENT. Paul L. Meunier (E. I. duPont de Nemours & Co.). USP 2 377 709, June 5. A pigment composition for textile fabrics includes a water-soluble organic pigment, a heat-convertible starch derivative and a capillary active agent such as ligninsulfonic acid or a salt thereof. The starch derivative may be a film-forming ester.

ARIDYE PIGMENT COLORS. 2. Dyeing and

Printing Nylon. Booklet of Aridye Corp., Fair Lawn, N. J., 1945.

Reviewed in *Textile Age 9,* No. 5, 122 (May 1945).

VIII. PROOFING

VIII, 1. Waterproofing; weatherproofing; moistureproofing

WATER REPELLENCY. S. Baxter & A. B. D. Cassie, Wool Industries Research Assoc'n. *J. Tex. Institute 36,* T67-90 (April 1945). A new test of water repellency has been developed in which the time required for the receding contact angle to decrease to 90° is measured. This time interval is called the "wetting time". Fabric structure is highly important in water repellency, the requirements being that the fibers shall be spaced uniformly and as far apart as possible, and that they must be held to prevent their ends from drawing together. These requirements are contrary to the idea of gabardine as a rain-resistant fabric and actually it is true that the initial large breakdown pressure of gabardine in the hydrostatic test fails to disclose the ease with which gabardine breaks down under actual rain conditions.

WATER REPELLENT. Jesse J. Cohen (15% to Joseph Heller.) USP 2 375 348, May 8. A water repellent is composed of Japan wax, Al stearate, raw oil and a water-soluble urea-formaldehyde resin in an aqueous emulsion containing a hydrocarbon solvent and a thermolabile ammonium soap which serves as the active emulsifier for the composition.

WATERPROOFING. G. L. Godman (to Lustrafil, Ltd.). Brit. P. 563 586. Cellulosic or regenerated cellulose rayon fabrics are waterproofed by applying a resin and then coating with a nontacky varnish containing an oil-modified alkyd resin but no protein or other synthetic resin. Fabric thus treated has high flexing resistance.

VIII, 3. Proofing against microbiological attack

ROTPROOFING COTTON. J. D. Dean, W. B. Strickland & W. N. Berard, Southern Regional Research Laboratory, USDA. *Am. Dyestuff Reptr. 34,* 195-201 (May 7, 1945). Results of soil burial tests on rotproof cotton fabrics are reported. The rotproofing agent was Cu naphthenate. A few other Cu compounds were also tried. On the whole these tests have given good results in predicting performance characteristics of treated cotton, but they serve only as a general guide since exposure conditions in military service are unpredictable.

MILDEWPROOFING. Victor P. Giddings, Jr., US Army, Corps of Engineers. *Am. Dyestuff Reptr. 34,* 220-1 (May 21, 1945). Tests on the mildewproofing and rotproofing of cotton fabric are reviewed as carried out since 1941 for the Corps of Engineers by the Southern Regional Research Laboratory of USDA at New Orleans and by the Nat'l Bur. of Standards in Washington. US Army Specification No. 100-17 was a result of this investigation.

VIII, 7. Proofing against chemicals, solvents, perspiration, etc.

STAINPROOF TABLECLOTH. Anon. *Rayon Textile Monthly 26,* 221 (May 1945). Tablecloths of real damask linen but proof against staining, and brightly colored drapes which can be wiped clean with a damp cloth are among the textile products which will presumably be possible after the war by treatment of fabrics with vinyl butyral and other resins. Other probable developments include knit fabrics with controlled one or two-way stretch, coated lace shower curtains, dust-resisting luggage in bright colors and durable lightweight rain coats.

IX. TESTING AND ANALYSIS; SPECIFICATIONS

IX, 1. Physical and mechanical

TEST REPORTS. Anon. *Textile Bull. 68,* No. 3, 28, 46; No. 8, 32, 34, 54 (Apr. 1 & June 15, 1945). In order to utilize informative test reports to the greatest advantage in quality control of finished goods, thorough testing of all dyes as to fastness when exposed to modern resin treatments is needed. Similar attention to data on cross dyeing would be equally beneficial.

TEXTILE TESTING. E. R. Short, Massachusetts Institute of Technology. *Rayon Textile Monthly 26,* 169-70 (April 1945). The time factor is extremely important in testing fibers, yarns, and fabric. Equipment now in use in the Slater Memorial Research Laboratory permits impact testing (full breaking load applied in less then 0.001 second) and, at the other extreme, precision measurements of deformation caused by small loads over a long period of time. The use of electric strain gages and photographic recording equipment greatly improves the testing technique.

ABRASION TESTER HANDBOOK. Taber Instrument Corp. North Tonawanda, N. Y., 1945.

Reviewed in *Can. Textile J. 62,* No. 10, 14 (May 18, 1945).

ASTM Standards on Testing Materials. ASTM Committee D-13; 1944 edition. Am. Soc. for Testing Materials, Philadelphia 2, Penn.; 473 pp.; price $2.75.

Reviewed in *Am. Dyestuff Reptr. 34,* 201 (May 7); *Rayon Textile Monthly 26,* 258 (May 1945).

VAPOR TRANSMISSION ANALYSIS OF SRUCTURAL INSULATING BOARD. F. B. Rowley & C. E. Lund. Eng. Experiment Station, Bulletin No. 22, Univ. of Minn. Minneapolis 1944; 71 pp.; price 40¢.

Reviewed in *Chem. & Met. Eng. 52,* No. 2, 242 (Feb. 1945).

IX, 1a. Fibers

SPINNABILITY. Simon Williams & Jack Towery, Nat'l Cotton Council of Am. *Cotton 109*, No. 4, 110-2 (April 1945). Comparative tests revealed no superiority in spinning behavior of roller ginned cotton to compensate the higher cost of roller ginning as compared with saw ginning.

EFFECT OF STORAGE UNDER CERTAIN SPECIFIED CONDITIONS ON THE QUALITY OF INDIAN COTTONS. Nazir Ahmad & A. N. Gulatic. Technological Bull. B31, Indian Central Cotton Committee, Technological Laboratory, Bombay, 1945; 20 pp.

Summarized in *Textile Mfr. 71*, 140 (April, 1945).

MATTRESSES, COTTON-FELT (FOR OFFICERS). Specification 27M18. Supplies and Accounts Bur. US Navy, Washington, Jan. 15, 1945; 5 pp.; gratis.

VARIATION IN COPPER NUMBER, COPRAMMONIUM FLUIDITY AND FIBER STRENGTH OF COTTON STORED UNDER HIGH HUMIDITY. C. Nanjundayya. Technological Bull. B32, Indian Central Cotton Committee, Technological Laboratory, Bombay, 1945.

Summarized in *Textile Mfr. 71*, 140 (April 1945).

IX, 1b. Yarns

INSPECTING TIRE CORD. Claude A. Hogan. USP *2 376 773*, May *22*. A reel for inspecting rayon or nylon tire cord has an upper roll and a drum mounted on the same shaft, a strap passing around the drum and holding a suspended weight, a roll of fabric on the upper roll, a fabric guide roll, an unwinding roll and an inspecting reel with space bars from which the fabric passes to a transfer reel and then to a winding roll.

CORD METER. L. Sharp & R. Winder. Brit. P. 563 348. A machine for measuring the length of rope or cord has an A-shaped frame holding a feed drum which leads to a measuring wheel and then to a receiving drum.

COTTON AND HEMP LINE. Specification DTD 612, Ministry of Aircraft Production. H. M. Stationery Office, London, March 1945; price 7d.

INTEGRAL YARN NUMBERING SYSTEM. Booklet of Textile Dept., Quebec Provincial Arts and Crafts School, 7345 Garnier St., Montreal, Quebec, 1945; gratis.

Reviewed in *Can. Textile J. 62*, No. 10, 38 (May 18, 1945).

NETS, CARGO (HARBOR ROPE), AMENDMENT 1. Joint Army Navy Specification JAN-N-70, Amendment 1, Supplies and Accounts Bur., US Navy, Washington, 1945; 1p. gratis.

SPUN SILK CORD. Specification DTD 686, Ministry of Aircraft Production, H. M. Stationery Office, London, March 1945; price 7d.

IX, 1c. Fabrics; foils; films

LIFE OF WOOLENS. Anon. *Am. Wool & Cotton Reptr. 59*, No. 22, 9-10, 13, 15-16 (May 31, 1945). Some practical considerations are discussed in relation to estimating the service life of woolen fabrics. Numerous reasons are cited for the common failure of numerical tests to predict actual service life and some experiences of military and civilian fabric service are mentioned.

COLOR FASTNESS. Anon. *Tech. News Bull.* No. *337*, 36 (May 1945). News note on calibration of arc lamps for testing fastness to light of dyes on textiles, paper and the like. The tests are made with standard strips of blue-dyed paper, supplied by the Nat'l Bur. of Standards.

COLD FEEL OF FABRICS. Anon. *Textile Recorder 62*, No. 743, 56-7 (Feb. 1945). A brief review of the literature on why fabrics feel cold and on the factors influencing this property.

COTTON HOSIERY. Margaret S. Furry & Arnold M. Hansen, Bur. of Human Nutrition & Home Economics USDA. *Rayon Textile Monthly 26*, 173-6 (April 1945). Stockings knit in a variety of constructions from combed and carded, single and 2-ply cotton yarns have been tested for distensibility and bursting strength, as properties having a direct bearing on wearing quality. Ply combed yarns gave a higher bursting strength than single combed yarns, and heavier yarns gave higher strength than light yarns. Distensibility decreased as the number of courses per inch increased. The mechanical tests were supplemented by consumer preference tests.

RAYON LININGS. J. H. Tate, Sears Roebuck & Co. *Rayon Textile Monthly 26*, 171-2 (April); *Textile Colorist 67*, 714-5 (April 1945). Tests with over 1100 lining fabrics, using an abrasion tester with photographic detection of end points, show that the warp yarn wears out first no matter what the weave or the relation between warp and filling yarns. Loose weave lessens resistence to abrasion. The filling yarn is only a minor factor in abrasion resistance, especially in twill and satin weaves. The finer yarns also have less abrasion resistance than coarser yarn.

CLOTH, COTTON, HERRINGBONE TWILL. Joint Army Navy Specification JAN-C-154 of Nov. 30, 1944. Supplies and accounts Bur., US Navy, Washington 1945; 4 pp.; gratis.

CLOTH, JUNGLE. Specification 27C22f, superseding 27C22e of Jan. 2, 1942. Supplies and Accounts Bur. US Navy, Jan. 15, 1945; 5 pp.; gratis.

COTTON CANTON FLANNELS FOR WORK GLOVES. Simplified Practice Recommendation R186-44, effective Nov. 1, 1944; supersedes R186-42. Nat'l Bur. of Standards, Washington, 1945; 3 pp.; price 5¢. From the Superintendent of Documents.

DETERMINATION OF SHRINKAGE IN HOSIERY FABRICS CONTAINING WOOL. E. G. H. Carter & W. S. M. Grieve. Special Publication No. 6, Wool Industries Research Assoc'n, Torridon, Leeds 6, England, 1944; 44 pp.; gratis.

Reviewed in *J. Soc. Dyers & Colourists 61,* 104 (April 1945).

FEDERAL SPECIFICATION FOR HANDKERCHIEFS, COTTON, AMENDMENT 1 OF DEC. 16, 1944. Specification DTD-8-71a, amendment 1, Federal Standard Stock Catalog Division, Washington, 1945; 1 p.; gratis.

INSTRUMENT FOR ESTIMATING TOUGHNESS OF DOPED FABRICS ON AIRCRAFT. G. M. Kline & H. F. Schiefer. Technical Note No. 729, Nat'l Advisory Committee for Aeronautics, 953 15th St., S. E., Washington 3, 1945.

Reviewed in *Rayon Textile Monthly 26,* 197 (April 1945).

RUBBER PROOFED COTTON CANVAS. Specification DTD 518, Ministry of Aircraft Production, H. M. Stationery Office, London, Feb. 1945; price 7d.

THREE AND ¾ OUNCE COTTON FABRIC. Specification DTD 633 (Amendment List No. 2). Ministry of Aircraft Production, H. M. Stationery Office, London, Feb. 1945; price 2d.

WOVEN PILE SEALING STRIP. Specification DTD 677, Ministry of Aircraft Production. H. M. Stationery Office, London, Feb. 1945; price 7d.

IX, 2. Chemical

IX, 2a. Fibers

CELLULOSE DISPERSIONS. S. A. Simon, Chicopee Mfg. Co. *Textile Research J. 15,* 82-3 (March 1945). A tumbling device which is useful for preparing cellulose dispersion is described and illustrated. The dispersions are prepared in cuprammonium solution or in other solutions which will disperse cellulose, and are employed in determining chain length or in other measurements of cellulose properties. In the new tumbling device the usual end-over-end action is supplemented by slow rotation of the viscometer around its own axis.

XII. HAZARDS; SAFETY PRECAUTIONS

INDUSTRIAL HOUSEKEEPING MANUAL. R. F. Vincent, Nat'l Foremen's Inst., Deep River, Conn., 1945; 116 pp.; price $2.50.

Reviewed in *Tech. Book Review Index 11,* 118 (June 1945).

XII, 1. Fire

SPRINKLER DIAPHRAGM. Anon. *Modern Plastics 22,* No. 9, 26, 63-4 (May 1945). A new type of automatic sprinkler system known as the rate-of-rise fire alarm, control and extinguishing system depends largely for its success on the operation of diaphragm cases which are molded of a laminated cotton fiber and phenolic resin product.

XII, 2. Accidents

ACCIDENT PREVENTION. Ernest A. Dench. *Textile Bull. 68,* No. 6, 32, 58 (May 15, 1945). Methods are suggested for reducing the accident hazards of those workers who are particularly prone to accident, whether through carelessness, inattention, inproper dress or other causes.

XII, 3. Occupational poisoning and diseases

HOT WEATHER FITNESS. Ernest A. Dench. *Textile Bull. 68,* No. 5, 14, 40-1 (May 1, 1945). Precautions against the occupational hazard of heat prostration and against loss of workers' efficiency in hot weather are discussed. They include matters of dress, diet and atmospheric environment.

XII, 4. Deterioration (corrosion and decay)

MILDEW DAMAGE. C. P. Healy & J. C. Niven, Amalgamated Wireless (Australasia Ltd.). *Proc. of the Inst. of Radio Eng. 33,* 300-6 (May 1945). Radio equipment exposed to tropical conditions is subject to rapid damage by mold. Paper, cotton, linen, cellulose derivatives, fabric laminates, rayon, flax and other fiber products used in various parts of radio equipment must either be protected or replaced by immune substances such as glass fiber or synthetic resins. Experiences in combating mildew under tropical conditions are described.

XIII. TEXTILE MILLS

XIII, 2. Machinery

MILL MODERNIZATION. Anon. *Am. Wool & Cotton Reptr. 59,* No. 13, 11, 13 (March 29, 1945). Changes in textile mill production methods during the next decade will be much influenced by developments in artificial and synthetic yarns and fabrics. A problem which must be faced in changing from old to newer and more efficient machines is the effect on overhead operating costs. The essential problem is whether or not the change in production efficiency and economies resulting therefrom will compensate for the overhead added by modernization costs.

ELECTRIFICATION. S. Birchall, British Thomson-Houston Co. *Textile Weekly 35,* 738, 740, 742, 784, 786, 788, 830, 832, 834 (April 20 & 27 & May 4, 1945). Mechanical and electrical problems to be solved in the electrification of cotton mills are discussed. Decisions need to be made between groups and individual drives or combinations of the 2 systems. Types of power transmission devices must also be adapted to individual conditions. Conditions in British mill practice are different from those in American mill practice.

TEXTILE MACHINERY. I. M. Shopman. *Textile Bull. 68,* No. 7, 28, 30, 50-1 (June 1, 1945). Practical hints are presented for the erection of textile machinery in the mills. Special attention is given to opening and picking equipment, cards, drawing machines and roving frames.

MILL ELECTRIFICATION. F. J. Stevenson, Crompton Parkinson, Ltd. *Textile Mfr. 71,* 172 (April 1945). Advantages of electric motors as single drives for textile machines are discussed. The success of individual drives does not, however, justify the assumption that this is the answer to all machine drive problems in textile mills.

PRELUBRICATED BEARINGS. O. S. Williams, Westinghouse Electric Corp. *Cotton 109,* No. 4, 113 (April 1945). Prelubricated sealed ball bearings for motors have given excellent service in numerous Southern cotton mill installations.

ROLL COVERS. J. Rockoff. Brit. P. 563 374. Vulcanized resilient roll covers are made of a synthetic rubber of the butadiene-acrylonitrile type.

XIII, 5. Lighting

MILL LIGHTING. Anon. *Textile Weekly 35,* 940, 942 (May 18, 1945). Progress made by the British Thomson-Houston Co. during 1944 in fluorescent lighting and in other aspects of efficient and economical industrial lighting is discussed. The Mazda "warm-white" fluorescent lamp was developed in 1944 but was not released to the market until 1945.

LIGHTING AND PRODUCTION. Henry Miedendorp, Jr. *Rayon Textile Monthly 26,* 185-7 (April 1945). Poor lighting may well be responsible for slow production in textile mills. Some faults of improper lighting are described and compared with good mill lighting and its effects on production efficiency, safety and comfort.

COLOR FOR INDUSTRY. Textile Dept., U. S. Gutta Percha Paint Co., Providence 1, Rhode Island, 1945.

Reviewed in *Can. Textile J. 62,* No. 10, 12 (May 18, 1945).

PRODUCTIVE COLORATION. Bulletin of the building products division L. Sonneborn Sons, Inc., New York City, 16, 1945.

Reviewed in *Southern Knitter 9,* No. 5, 62-3 (May 1945).

RELATION BETWEEN ILLUMINATION AND VISUAL EFFICIENCY: EFFECT OF BRIGHTNESS CONTRAST. H. C. Weston. Report No. 87, Industrial Health Research Board, H. M. Stationery Office, London 1945; price 9d.

Reviewed in *Textile Mfr. 71,* 167 (April 1945).

XIII, 7. Process control; control instruments

INSTRUMENTATION. J. L. Coburn, Leeds & Northrup Co. *Am. Dyestuff Reptr. 34,* 217-20 (May 21, 1945). Ways in which textile mills are meeting quality demands by extending their use of control instruments are reviewed. Among the instruments described and illustrated are those employed to control the composition of water supplies or processing baths, to regulate machine speeds and to maintain prescribed atmospheric conditions.

EVAPORATIVE COOLING. M. H. Irons, Am. Moistening Co. *Textile Bull. 68,* No. 8, 26, 28, 30, 50-1 (June 15, 1945). Systems which employ evaporative cooling for control of atmospheric conditions in the spinning room and in other textile operations are discussed, with illustrative figures for an actual installation.

ELECTRONICS. A. P. Mansfield, General Electric Co. *Cotton 109,* No. 4, 97-100 (April 1945). Some applications of electronics to textile manufacturing processes are described and illustrated. They include the Thyratron motor speed control drive; an attachment on an electric tachometer for controlling yarn speed on a beamer; a photoelectric loom control for regulating the speed of cloth running through a machine; a control for the batcher drive on a tenter; an automatic weft straightening device; a photoelectric recording output meter; a motor speed control device to permit higher speed in printing fabrics with size; an apparatus for electrocoating fabrics with pile fibers, which can be applied against an adhesive base with as many as 300,000 pile fibers psi, applied with remarkable uniformity.

DRIER CONTROL. M. Dalglish, M. C. Cook, L. S. Laurie & J. Dalglish. Brit. P. 563 480. An electrical moisture-sensitive control device is utilized to control the drying of moving fabrics, so that drying effect decreases when the moisture content drops below a predetermined value.